2014 RCCSD CAPITAL IMPROVEMENTS

RICHARDSON PARK ELEMENTARY

16 IDELLA AVENUE

WILMINGTON, DELAWARE 19804

RED CLAY CONSOLIDATED SCHOOL DISTRICT — **OWNER**
1502 SPRUCE AVENUE
WILMINGTON, DELAWARE 19805

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DRAWING LIST

Sheet No.	Title
G-001	COVER SHEET
A-101	BASEMENT PLAN
A-102	FIRST FLOOR PLAN
A-103	SECOND FLOOR PLAN
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A-611	WINDOW DETAILS
M-001	LEGEND SHEET MECHANICAL
MD-100	PARTIAL BASEMENT PLANS DEMOLITION MECHANICAL
MD-101	ENLARGED BOILER ROOM PLANS DEMOLITION MECHANICAL
MD-110	PARTIAL FIRST FLOOR PLAN DEMOLITION MECHANICAL
MD-111	PARTIAL FIRST FLOOR PLAN DEMOLITION MECHANICAL
MD-112	PARTIAL FIRST FLOOR PLAN DEMOLITION MECHANICAL
MD-120	PARTIAL SECOND FLOOR PLAN DEMOLITION MECHANICAL
MD-121	PARTIAL SECOND FLOOR PLAN DEMOLITION MECHANICAL
MD-130	PARTIAL ROOF PLAN DEMOLITION MECHANICAL
M-100	PARTIAL BASEMENT PLAN MECHANICAL
M-110	PARTIAL FIRST FLOOR PLAN MECHANICAL
M-111	PARTIAL FIRST FLOOR PLAN MECHANICAL
M-112	PARTIAL FIRST FLOOR PLAN MECHANICAL
M-120	PARTIAL SECOND FLOOR PLAN MECHANICAL
M-121	PARTIAL SECOND FLOOR PLAN MECHANICAL
M-130	PARTIAL ROOF PLAN MECHANICAL
M-500	DETAILS MECHANICAL
M-600	SCHEDULES MECHANICAL

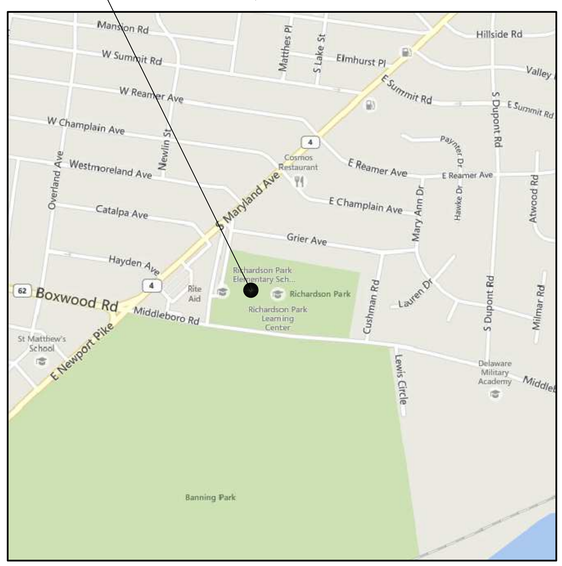
SYMBOLS

- C1 / A110 — SECTION NUMBER / SHEET WHERE SECTION IS DRAWN
- B4 / A101 — DETAIL NUMBER / SHEET WHERE DETAIL IS DRAWN
- 2 — WALL TYPE
- 117A — DOOR NUMBER
- 3 — WINDOW/LOUVER TYPE
- 1 — COLUMN NUMBER OR LETTER
- 2 — REVISION INDICATOR
- 3 — KEYNOTE INDICATOR
- OFFICE / 001 — ROOM NAME / ROOM NUMBER
- A1 / A4 A111 A2 / A3 — ELEVATION NUMBER / SHEET WHERE ELEVATION IS DRAWN
- WORK POINT, CONTROL POINT
- & AND
- ∠ ANGLE
- @ AT
- ∅ DIAMETER OR ROUND
- # POUND OR NUMBER
- ℄ CENTER LINE
- PL PLATE
- +/- PLUS OR MINUS
- CONCRETE MASONRY UNIT
- BRICK
- CONCRETE
- DRAINAGE FILL
- EARTH
- INSULATION - BATT
- INSULATION - RIGID
- WOOD - ROUGH
- WOOD - FINISH
- PLYWOOD
- GYPSUM WALL BOARD
- STEEL

ABBREVIATIONS

AB	ANCHOR BOLT
ACST	ACOUSTIC
AD	AREA DRAIN
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AGGR	AGGREGATE
ALUM	ALUMINUM
ALT	ALTERNATE
APPROX	APPROXIMATE
ARCH	ARCHITECT
BD	BOARD
BOF	BOTTOM OF FOOTING
BOS	BOTTOM OF STEEL
BITUM	BITUMINOUS
BLDG	BUILDING
BM	BEAM
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BRG	BEARING
BU	BUILT-UP
BW	BOTH WAYS
BLKG	BLOCKING
CAB	CABINET
CB	CATCH BASIN
CEM	CEMENT
CER	CERAMIC
CI	CAST IRON
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CLG	CEILING
CLO	CLOSET
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CNTR	COUNTER
COL	COLUMN
CONC	CONCRETE
CONSTR	CONSTRUCTION
CORR	CORRIDOR
CT	CERAMIC TILE
DBL	DOUBLE
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIM	DIMENSION
DISP	DISPENSER
DN	DOWN *****
DS	DOWNSPOUT
DWG	DRAWING
E	EAST
EA	EACH
EXP BT	EXPANSION BOLT
EJ	EXPANSION JOINT
ELEC	ELECTRIC
EL	ELEVATION
EMER	EMERGENCY
ENCL	ENCLOSURE
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EXP	EXPANSION
EXIST	EXISTING
EXPO	EXPOSED
EXT	EXTERIOR
FA	FIRE ALARM
FD	FLOOR DRAIN
FDTN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CAB.
FHC	FIRE HOSE CABINET
FIN	FINISH
FLR	FLOOR
FLUOR	FLUORESCENT
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FP	FIREPROOF
FS	FULL SIZE
FT	FOOT OR FEET
FTG	FOOTING
FURG	FURRING
FUT	FUTURE
GA	GAGE
GALV	GALVANIZED
GB	GRAB BAR
GL	GLASS
G	GROUND
GSU	GLAZED STRUCTURAL UNIT
GYP BD	GYPSUM BOARD
GYP	GYPSUM
HB	HOSE BIBB
HC	HOLLOW CORE
HDWD	HARDWOOD
HDW	HARDWARE
HT	HEIGHT
HM	HOLLOW METAL
HORIZ	HORIZONTAL
ID	INSIDE DIAMETER (DIM.)
INSUL	INSULATION
INT	INTERIOR
INV	INVERT
JAN	JANITOR
JT	JOINT
JST	JOIST
LAB	LABORATORY
LAM	LAMINATE
LAV	LAVATORY
LKR	LOCKER
LPT	LOW POINT
LT	LIGHT
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
MAX	MAXIMUM
MECH	MECHANICAL
MED	MEDIUM
MEMB	MEMBRANE
MTL	METAL
MH	MANHOLE
MIN	MINIMUM
MIRR	MIRROR
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MRT	MARBLE THRESHOLD
MTD	MOUNTED
MULL	MULLION
N	NORTH
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER (DIM.)
OFF	OFFICE
OPNG	OPENING
OPP	OPPOSITE
PCC	PRECAST CONCRETE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLYWD	PLYWOOD
PR	PAIR
PSF	POUNDS/SQ. FOOT
PSI	POUNDS/SQ. INCH
PT	PAINT
PVG	PAVING
QT	QUARRY TILE
R	RISER
R	RADIUS
RD	ROOF DRAIN
REF	REFERENCE
REF	REFRIGERATOR
REG	REGISTER
REINF	REINFORCE
REQD	REQUIRED
RESIL	RESILIENT
RET	RETURN
RM	ROOM
RO	ROUGH OPENING
RWD	REDWOOD
S	SOUTH
SC	SOLID CORE
SCHED	SCHEDULE
SECT	SECTION
SHR	SHOWER
SIM	SIMILAR
STL	STEEL
SPEC	SPECIFICATION
SQ	SQUARE
SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
STOR	STORAGE
STRUCT	STRUCTURAL
SUSP	SUSPEND
SYMM	SYMMETRICAL
TOC	TOP OF CURB
TEL	TELEPHONE
TER	TERRAZZO
T & G	TONGUE AND GROOVE
TOM	TOP OF MASONRY
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOS	TOP OF STEEL
TP	TOP OF PAVEMENT
TV	TELEVISION
TOW	TOP OF WALL
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
VWC	VINYL WALL COVERING
W	WEST
W/	WITH
WC	WATER CLOSET
WD	WOOD
WI	WROUGHT IRON
W/O	WITHOUT
WP	WORKING POINT
WSCT	WAINSCOT
WT	WEIGHT
WWF	WELDED WIRE FABRIC

SITE



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MARK	DATE	DESCRIPTION
2	02/27/15	ADDENDUM No. 1
1	02/16/15	BID PAC A

PROJECT NO: 1425
FILE NAME —
DRAWN BY: SMM
CHECKED BY: CN

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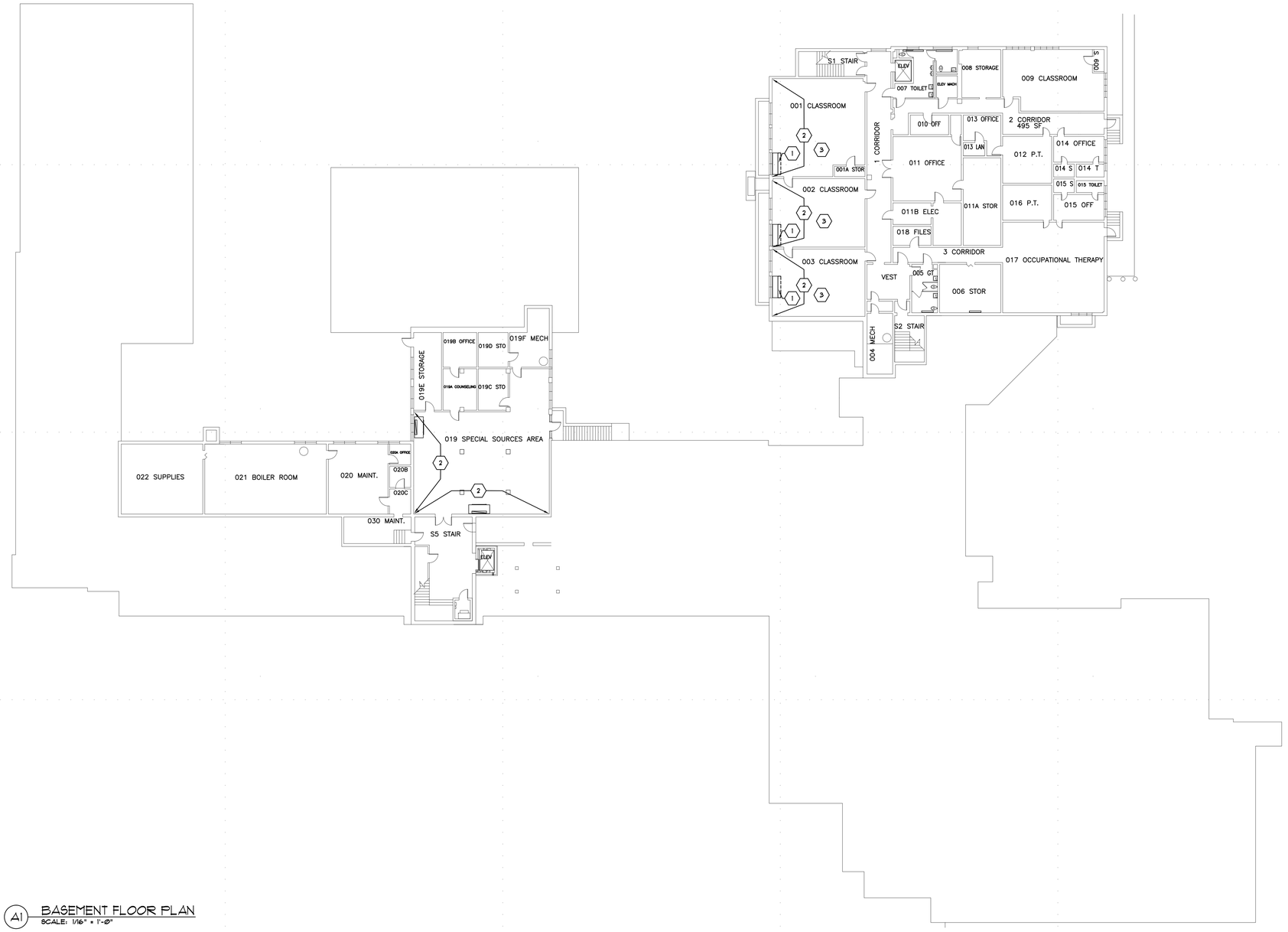
SHEET TITLE

COVER SHEET

G-001



A1 BASEMENT FLOOR PLAN
SCALE: 1/16" = 1'-0"

GENERAL SHEET NOTES

A. VERIFY ALL DIMENSIONS & CONDITIONS IN THE FIELD BEFORE PROCEEDING WITH WORK.

B. SEAL ALL PENETRATIONS THRU RATED PARTITIONS AND FLOOR SLABS WITH FIRE BARING INSULATION AND SEALANT AS REQ'D TO MAINTAIN RATED SEPARATION. COORDINATE LOCATIONS WITH MECHANICAL DRAWINGS.

C. SEE MEP DRAWINGS FOR EXTENT OF MECHANICAL, ELECTRICAL, & PLUMBING DEMOLITION.

LEGEND:

146 E1 — DOOR TAG - SEE SHEET A-610

A — WINDOW TAG - SEE SHEET A-610

SHEET KEYNOTES

1. PATCH FLOOR WITH VCT AND COVE BASE AS REQ'D. AFTER INSTALLATION OF NEW UNIT VENTILATORS. COLOR TO MATCH EXISTING.
2. PATCH EXPOSED HOLES IN PLASTER / DRYWALL SURFACES FROM REPLACEMENT OF UNIT VENTILATORS. PAINT WALL, COLOR TO MATCH EXISTING.
3. REMOVE EXISTING ACT AND RETAIN FOR REINSTALLATION. COORDINATE LOCATIONS WITH MEP DRAWINGS.

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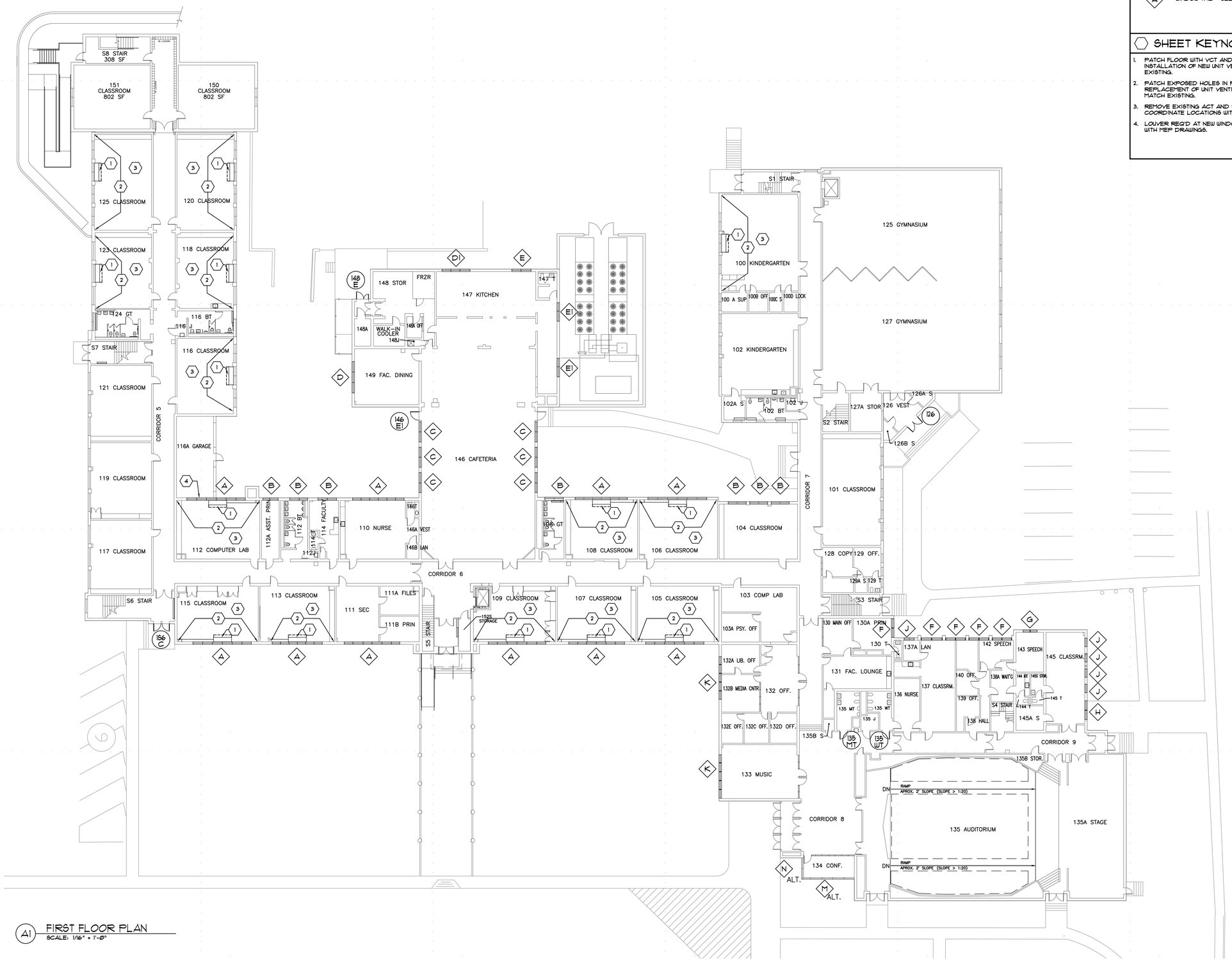
SHEET TITLE

BASEMENT PLAN

A-101



A1 FIRST FLOOR PLAN
SCALE: 1/16" = 1'-0"

GENERAL SHEET NOTES

A. VERIFY ALL DIMENSIONS & CONDITIONS IN THE FIELD BEFORE PROCEEDING WITH WORK.

B. SEAL ALL PENETRATIONS THRU RATED PARTITIONS AND FLOOR SLABS WITH FIRE BARING INSULATION AND SEALANT AS REQ'D TO MAINTAIN RATED SEPARATION. COORDINATE LOCATIONS WITH MECHANICAL DRAWINGS.

C. SEE MEP DRAWINGS FOR EXTENT OF MECHANICAL, ELECTRICAL, & PLUMBING DEMOLITION.

LEGEND:

146 E1 — DOOR TAG - SEE SHEET A-610

A — WINDOW TAG - SEE SHEET A-610

SHEET KEYNOTES

1. PATCH FLOOR WITH VCT AND COVE BASE AS REQ'D. AFTER INSTALLATION OF NEW UNIT VENTILATORS. COLOR TO MATCH EXISTING.
2. PATCH EXPOSED HOLES IN PLASTER / DRYWALL SURFACES FROM REPLACEMENT OF UNIT VENTILATORS. PAINT WALL, COLOR TO MATCH EXISTING.
3. REMOVE EXISTING ACT AND RETAIN FOR REINSTALLATION. COORDINATE LOCATIONS WITH MEP DRAWINGS.
4. LOUVER REQ'D AT NEW WINDOW UNIT FOR RELIEF AIR, COORDINATE WITH MEP DRAWINGS.

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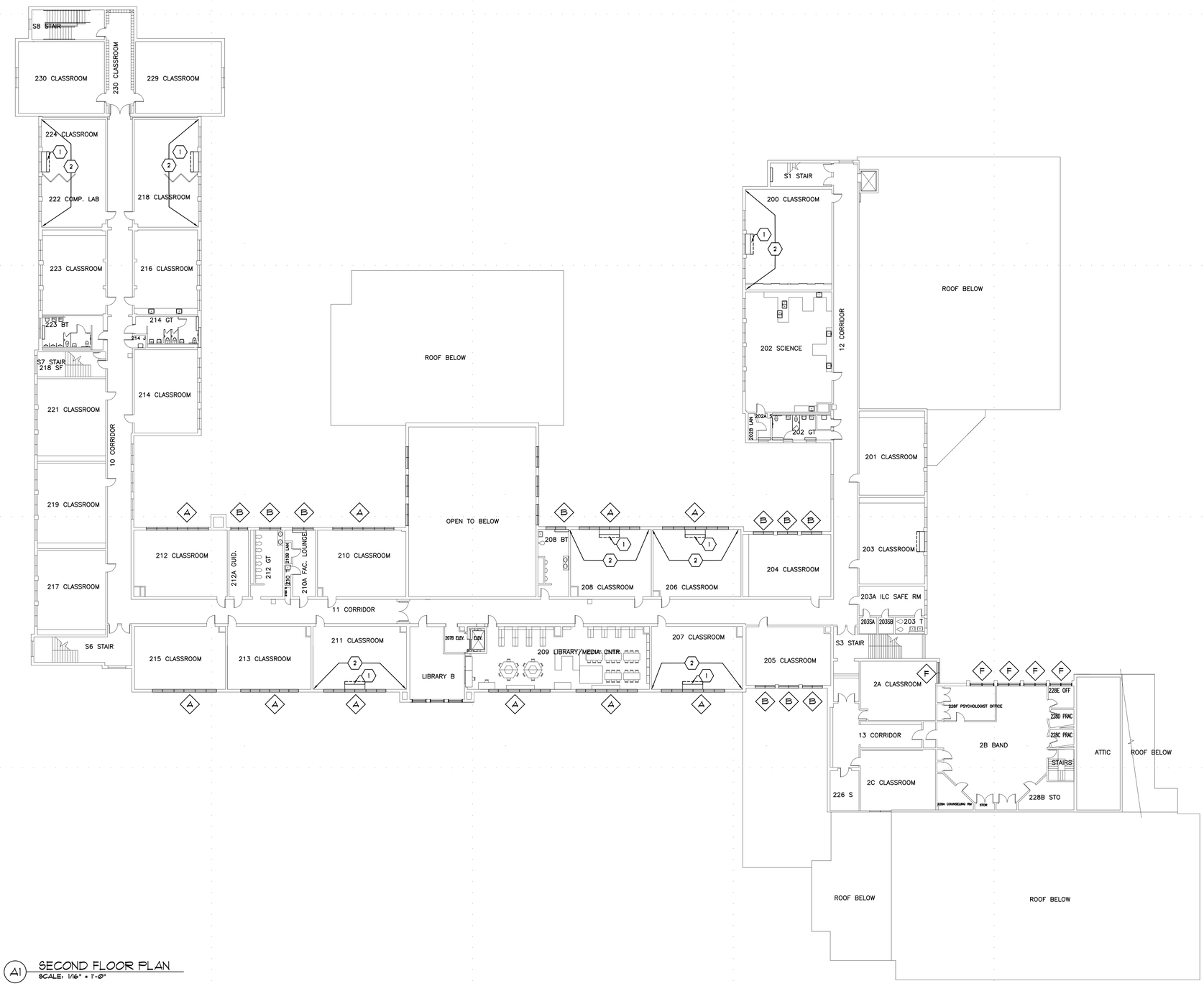
SHEET TITLE
FIRST FLOOR PLAN

A-102



A1 SECOND FLOOR PLAN
SCALE: 1/16" = 1'-0"

GENERAL SHEET NOTES

A. VERIFY ALL DIMENSIONS & CONDITIONS IN THE FIELD BEFORE PROCEEDING WITH WORK.

B. SEAL ALL PENETRATIONS THRU RATED PARTITIONS AND FLOOR SLABS WITH FIRE BARING INSULATION AND SEALANT AS REQ'D TO MAINTAIN RATED SEPARATION. COORDINATE LOCATIONS WITH MECHANICAL DRAWINGS.

C. SEE MEP DRAWINGS FOR EXTENT OF MECHANICAL, ELECTRICAL, & PLUMBING DEMOLITION.

LEGEND:

146 E — DOOR TAG - SEE SHEET A-610

A — WINDOW TAG - SEE SHEET A-610

SHEET KEYNOTES

1. PATCH FLOOR WITH VCT AND COVE BASE AS REQ'D. AFTER INSTALLATION OF NEW UNIT VENTILATORS. COLOR TO MATCH EXISTING.
2. PATCH EXPOSED HOLES IN PLASTER / DRYWALL SURFACES FROM REPLACEMENT OF UNIT VENTILATORS. PAINT WALL, COLOR TO MATCH EXISTING.
3. REMOVE EXISTING ACT AND RETAIN FOR REINSTALLATION. COORDINATE LOCATIONS WITH MEP DRAWINGS.

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DRAWN BY: SMM
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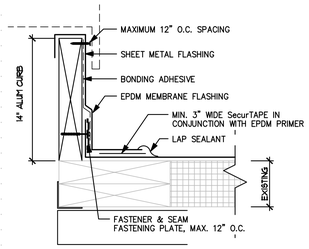
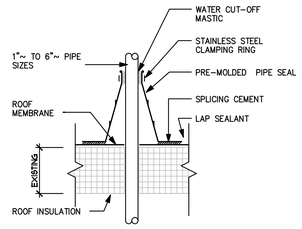
SHEET TITLE
SECOND FLOOR PLAN

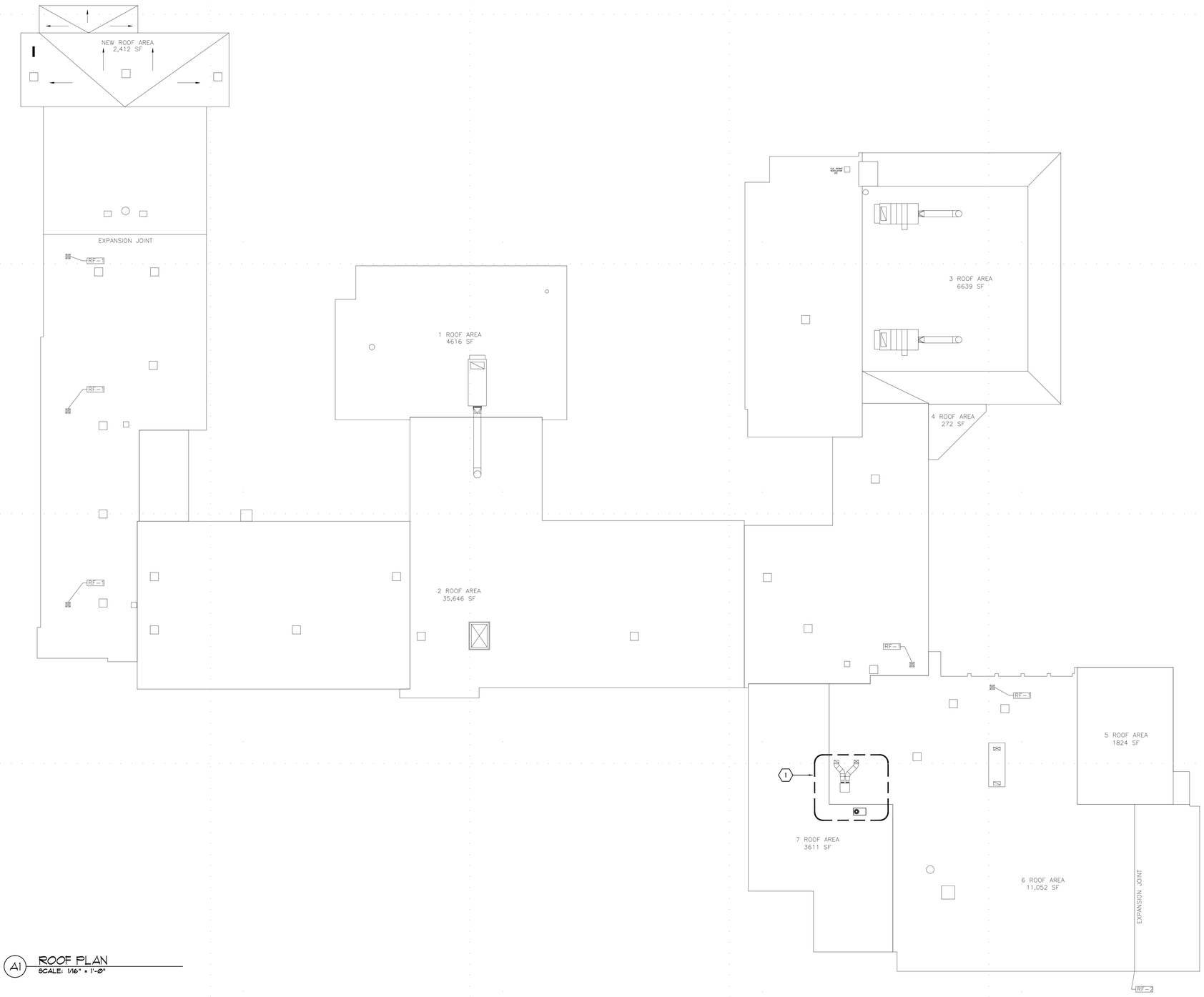
A-103



E4 CURB DETAIL , TYP.
SCALE: 3" = 1'-0"



E5 PIPE PENETRATION, TYP.
SCALE: 3" = 1'-0"



A1 ROOF PLAN
SCALE: 1/16" = 1'-0"

GENERAL SHEET NOTES

A. VERIFY ALL DIMENSIONS & CONDITIONS IN THE FIELD BEFORE PROCEEDING WITH WORK.

B. SEE MEP DRAWINGS FOR EXTENT OF MECHANICAL, ELECTRICAL, & PLUMBING DEMOLITION.

C. COORDINATE EXTENT OF ROOF PATCH AND REPAIR WORK WITH MEP DRAWINGS.

SHEET KEYNOTES

1. AREA OF MECHANICAL ABATEMENT. PROVIDE PATCH AND REPAIR AS REQUIRED AT EXISTING ROOF DURING DEMOLITION AND INSTALLATION OF NEW EQUIPMENT.

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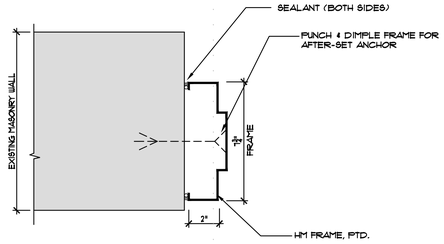
SHEET TITLE

ROOF PLAN
& DETAILS

A-104

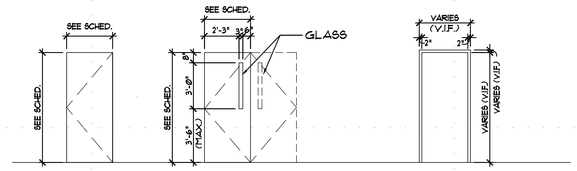


E2 HEAD/JAMB DETAIL - TYP.
SCALE: 3" = 1'-0"

DOOR AND FRAME SCHEDULE

Number	DOOR Size Width x Height	Rating	Material	Type	Finish	Glass Type	FRAME Material	Type	Finish	DETAIL Head	Jamb	Threshold	HW Set	Notes
126	(2)3'-0" x 7'-0"	--	ETR	ETR	P	--	ETR	ETR	P	-	-	--	003	03 / 06 / 07
146E1	3'-6" x 6'-10"	--	HM	D	P	A	HM	1	P	-	-	--	001	01 / 06 / 07
148E	3'x7' / 2'x7'	--	HM	DD	P	A	ETR	ETR	P	-	-	--	002	02 / 06 / 07 / 08
156C	(2)3'-0" x 7'-0"	--	ETR	ETR	P	--	ETR	ETR	P	-	-	--	-	07
135MT	3'-0" x 7'-0"	--	WD	A	N	--	ETR	ETR	P	-	-	--	004	(ALTERNATE) 03 / 06
135WT	3'-0" x 7'-0"	--	WD	A	N	--	ETR	ETR	P	-	-	--	004	(ALTERNATE) 03 / 06

DOORS



FRAMES

A (SINGLE)

D (SINGLE)
DD (DOUBLE)

TYPE 1

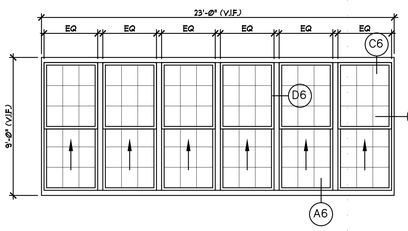
DOOR SCHEDULE-GENERAL NOTES

A. SEE PROJECT MANUAL FOR:
   HARDWARE GROUPS
   GLASS TYPES
   DOOR AND FRAME FINISHES
   ACOUSTICAL TREATMENT
B. SEE FLOOR PLANS FOR DIRECTION OF SWING.
C. ALL FRAME SIZES DETERMINED BY DOOR SIZE (UNLESS OTHERWISE NOTED.)
D. LABEL FRAMES SAME AS CORRESPONDING DOORS.
E. ALL DOORS TO BE 1-3/4" THICK (UNLESS OTHERWISE NOTED)
F. GROUT ALL HOLLOW METAL FRAMES AT MASONRY CONDITIONS SOLID.
G. GLASS STOPS AT HOLLOW METAL FRAMES ARE TO BE REMOVABLE.
H. PROVIDE SEALANT BOTH SIDES OF ALL FRAMES.
I. (NOT USED)
J. FINISH LEGEND:
   ETR = EXISTING TO REMAIN
   P = PAINT
   F = FACTORY FINISH
   S = STAIN
   N = NATURAL (TRANSPARENT)
K. DASH LINE (--) IN SCHEDULE INDICATES ITEM NOT REQUIRED.
L. ALL HOLLOW METAL FRAMES ARE WELDED TYPE (UNLESS OTHERWISE NOTED)
M. MATERIAL LEGEND:
   WD = WOOD
   HM = HOLLOW METAL
   AL = ALUMINUM
   STL = STEEL
   SS = STAINLESS STEEL
N. DOOR LABEL RATINGS SHOWN ARE IN MINUTES.
O. DETAIL NUMBERS IN DOOR SCHEDULE REFERENCE DETAILS ON SHEET A610 (UNLESS OTHERWISE NOTED)
P. ALL EXISTING DOOR & FRAME SIZES TO BE VERIFIED IN FIELD

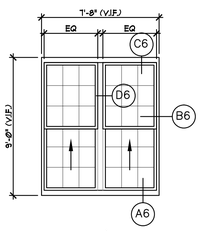
DOOR SCHEDULE-SPECIAL NOTES

OPENING NOTES:

1. REPLACE DOOR, FRAME & HARDWARE
2. REPLACE DOOR & HARDWARE
3. ADJUST / MODIFY / UPDATE DOOR HARDWARE
4. REPAIR / REPLACE EXTERIOR WOOD TRIM/MOLDING
5. NOT USED
6. PATCH FRAME FOR NEW HARDWARE
7. PAINT DOOR & FRAME
8. VISION PANEL AT 3'-0" DOOR LEAF ONLY



A WINDOW TYPE
SINGLE HUNG



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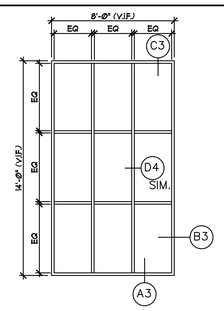
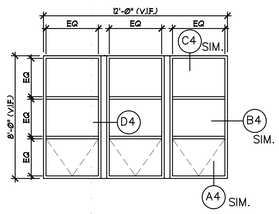
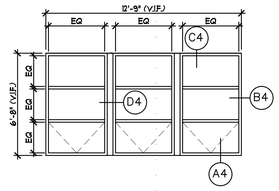


C WINDOW TYPE
2-1/4" FIXED



D WINDOW TYPE
FLUSH - PROJECT-IN



D1 WINDOW TYPE
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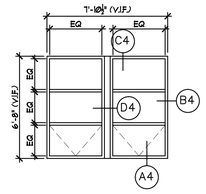
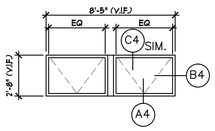


E WINDOW TYPE
FLUSH - PROJECT-IN



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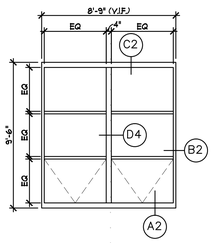

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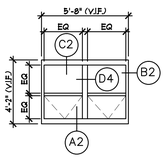
FLUSH - PROJECT-IN



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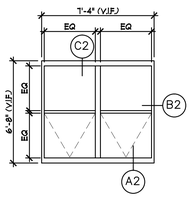

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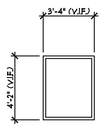
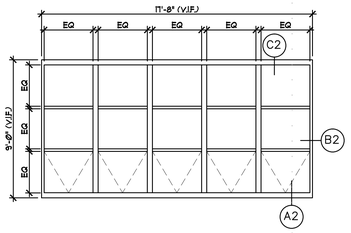
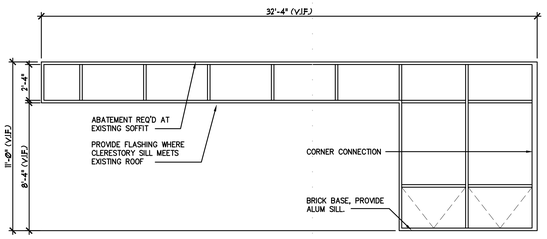
FLUSH - PROJECT-IN



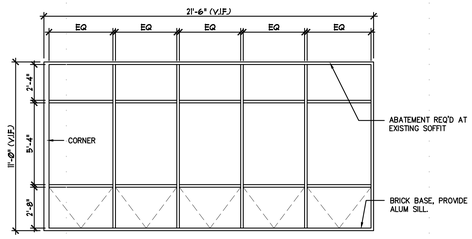
J WINDOW TYPE
2-1/4" FIXED



K WINDOW TYPE
FLUSH - PROJECT-IN



M WINDOW TYPE (ALTERNATE)
FLUSH - PROJECT-IN



N WINDOW TYPE (ALTERNATE)
FLUSH - PROJECT-IN

WINDOW SCHEDULE - GENERAL NOTES

1. ALL WINDOW SIZES TO BE VERIFIED IN FIELD
2. SEE SPECIFICATIONS FOR GLASS TYPES
3. ALL WINDOW REMOVAL AND DISPOSAL TO BE COMPLETED BY ABATEMENT CONTRACTOR.
4. REFER TO SHEET A-611 FOR WINDOW DETAILS

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MARK	DATE	DESCRIPTION
2	02/27/15	ADDENDUM No. 1
1	02/16/15	BID PAC A

PROJECT NO: 1425
FILE NAME: –
DRAWN BY: SMM
CHECKED BY: CN

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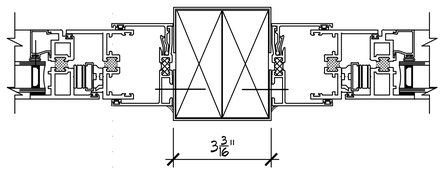
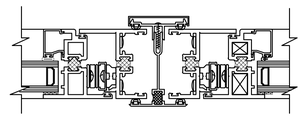
SHEET TITLE
DOOR & WINDOW
SCHEDULE & DETAILS

A-610



D2 VERT. MULLION - PROJECT-IN
SCALE: 6"=1'-0"



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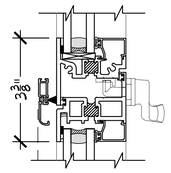
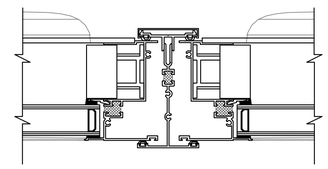


D5 FIXED/PROJECT-IN DETAIL
SCALE: 6"=1'-0"



D6 VERT. MULLION - SINGLE HUNG
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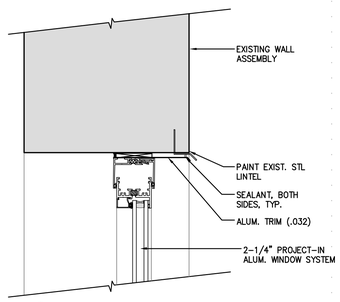

C2 HEAD DETAIL - TYP.
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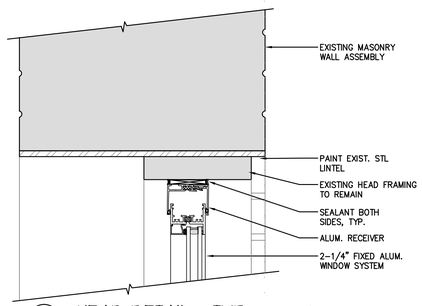

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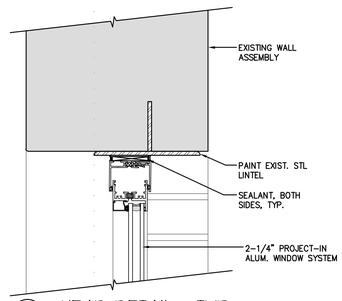

C4 HEAD DETAIL - TYP.
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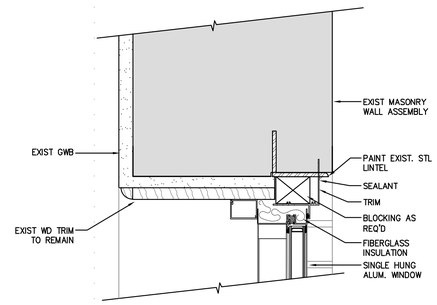
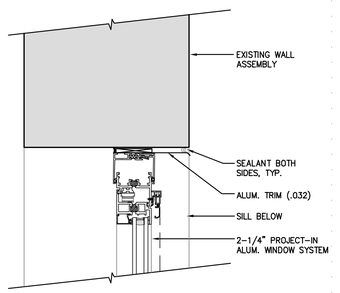


C6 HEAD DETAIL - TYP.
SCALE: 3"=1'-0"



B2 JAMB DETAIL - TYP.
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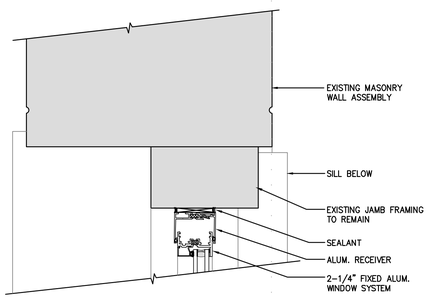

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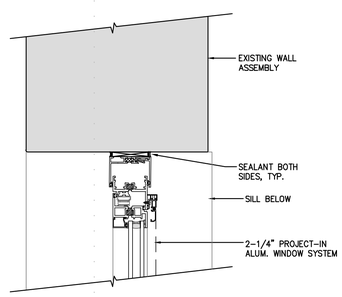

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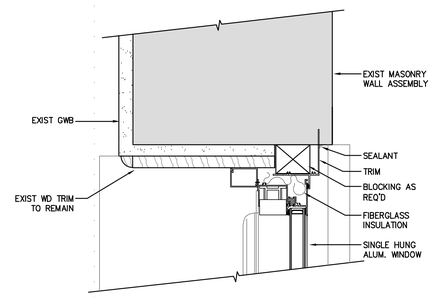

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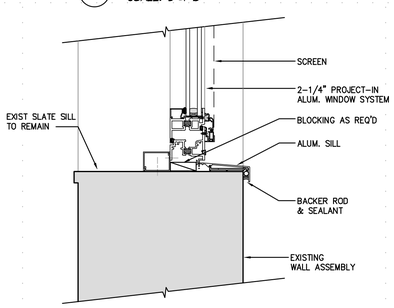

A2 SILL DETAIL - TYP.
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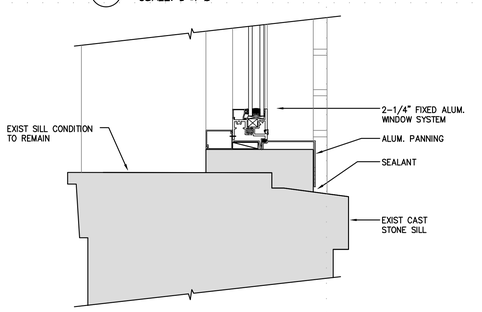

A3 SILL DETAIL - TYP.
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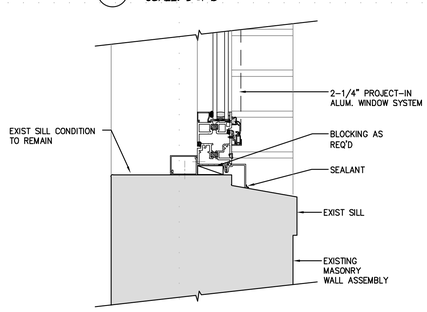

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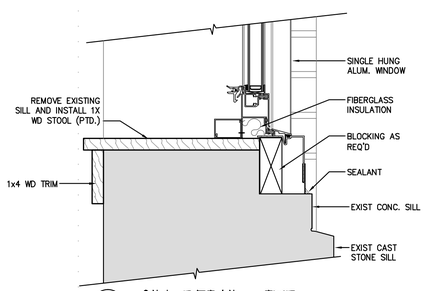

A6 SILL DETAIL - TYP.
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SHEET TITLE
WINDOW DETAILS

A-611

ABBREVIATIONS

AC	AIR CONDITIONING UNIT/ACCESS SECTION
ACC	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
AF	AFTER FILTER
AFCV	AIR FLOW CONTROL VALVE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFM	AIR FLOW MEASURING DEVICE
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
ATC	AUTOMATIC TEMPERATURE CONTROL
B	BOILER
BDD	BACKDRAFT DAMPER
BF	FEED WATER PUMP DISCHARGE
BLW	BELOW
BO	BLOW OFF/BLOW DOWN
BOS	BOTTOM OF STEEL/STRUCTURE
BRD	BAROMETRIC DAMPER
BS	BASKET STRAINER
C	CONDENSER WATER SUPPLY
CAF	COMBUSTION AIR FAN
CC	COOLING COIL
CD	CONDENSATE DRAIN/CEILING DIFFUSER
CF	CENTRIFUGAL FAN
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CIR	CAST IRON RADIATOR
CO	CLEAN OUT
COMP	COMPRESSOR UNIT
CONC	CONCRETE
CP	CONDENSATE PUMP
CR	CONDENSER WATER RETURN/ CEILING RETURN
CRU	COMPUTER ROOM UNIT
CT	COOLING TOWER
CU	CONDENSING UNIT/COOLING UNIT
CUH	CABINET UNIT HEATER
CV	CONVECTOR
CW	COLD WATER
CWR	CHILLED WATER RETURN
CWS	CHILLED WATER SUPPLY
D	DRAIN/DEEP
Db	DRY BULB TEMPERATURE, °F
dB	DECIBELS
DDC	DIRECT DIGITAL CONTROL
DISCH	DISCHARGE
DHU	DEHUMIDIFIER
DN	DOWN
DP	DEW POINT TEMPERATURE, °F
DSD	DUCT SMOKE DETECTOR
DTR	DUAL TEMP WATER RETURN
DTS	DUAL TEMP WATER SUPPLY
DWH	DOMESTIC WATER HEATER
DWG	DRAWING
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	EVAPORATIVE CONDENSER
ECC	ENGINEERING CONTROL CENTER
EDH	ELECTRIC COIL DUCT HEATER
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EL	ELBOW
EGW	ETHYLENE GLYCOL-WATER SOLUTION
ERC	ENERGY RECOVERY COIL
ER	EXHAUST REGISTER
ERP	ELECTRIC RADIANT CEILING PANEL
ESP	EXTERNAL STATIC PRESSURE
EWF	ELECTRIC WALL FIN
ECH	ELECTRIC CABINET HEATER
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
EWC	EVAPORATIVE WATER COOLER
EWH	ELECTRIC WALL HEATER
EWT	ENTERING WATER TEMPERATURE
(EX)	EXISTING
EXH	EXHAUST
FC	FLEXIBLE CONNECTION
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FDR	FLOOR DRAIN
FLA	FULL LOAD AMPS
FLR	FLOOR
FMB	FILTER MIXING BOX
FM	WATER FLOW MEASURING DEVICE
FPM	FEET PER MINUTE
FT-A	FIN TUBE RADIATION-TYPE A
FV	FACE VELOCITY
GCR	GLYCOL CHILLED-WATER RETURN
GC	GLYCOL CHILLED-WATER SUPPLY
GDF	GAS DUCT FURNACE
GHP	GEOTHERMAL HEAT PUMP
GHR	GLYCOL HOT-WATER RETURN
GHS	GLYCOL HOT-WATER SUPPLY
GPM	GALLONS PER MINUTE
GUH	GAS UNIT HEATER
H	HIGH
HC	HEATING COIL
HD	HOOD
HE	AIR TO AIR HEAT EXCHANGE
HEF	HIGH EFFICIENCY FURNACE
HF	HEPA FILTER
HP	HORSEPOWER
HPC	HIGH PRESSURE STEAM CONDENSATE RETURN
HPS	HIGH PRESSURE STEAM (16 PSIG & ABOVE)
HPWS	HEAT PUMP WATER SUPPLY
HRP	HYDRONIC RADIANT CEILING PANEL
HPWR	HEAT PUMP WATER RETURN
HTWR	HIGH TEMP. HOT WATER RETURN
HTWS	HIGH TEMP. HOT WATER SUPPLY
HU	HUMIDIFIER
HVU	HEATING AND VENTILATING UNIT
HWR	HEATING HOT WATER RETURN
HWS	HEATING HOT WATER SUPPLY
HX	HEAT EXCHANGER
ID	INSIDE DIAMETER
IEF	INDUSTRIAL EXHAUST FAN
IFB	INTEGRAL FACE AND BYPASS
IR	INFRA RED
IU	INDUCTION UNIT
LAT	LEAVING AIR TEMPERATURE
LBS/HR	POUNDS PER HOUR
LD	LINEAR DIFFUSER
LCD	LINEAR CEILING DIFFUSER
LPC	LOW PRESSURE STEAM CONDENSATE RETURN
LPS	LOW PRESSURE STEAM (15 PSIG & BELOW)
LR	LINEAR RETURN
LRA	LOCKED ROTOR AMPS
LTCP	LOCAL TEMPERATURE CONTROL PANEL
LWT	LEAVING WATER TEMPERATURE
MA	MIXED AIR
MAX	MAXIMUM
MB	MIXING BOX
MBH	THOUSAND BTU PER HOUR
MCA	MINIMUM CIRCUIT AMPS
MCC	MOTOR CONTROL CENTER
MO	MASONRY OPENING
MOD	MOTOR OPERATED DAMPER
MOCP	MAXIMUM OVERCURRENT PROTECTION
MIN	MINIMUM
NIC	NOT IN CONTRACT
NOM	NOMINAL
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
P	PUMP
PD	PRESSURE DROP (FEET OF WATER)
PD	CONDENSATE PUMP DISCHARGE
PLBG	PLUMBING
PF	PRE-FILTER
PGW	PROPYLENE GLYCOL-WATER SOLUTION
PHC	PREHEAT COIL
PRV	PRESSURE REDUCING VALVE
PSIG	POUNDS/SQUARE INCH
PVC	POLYVINYL CHLORIDE
(R)	REMOVE
RA	RETURN AIR
RF	RETURN AIR FAN/RELIEF
RG	RETURN GRILLE
RHC	REHEAT COIL
Rh	RELATIVE HUMIDITY
RHG	REFRIGERANT HOT GAS
RL	REFRIGERANT LIQUID
RPM	REVOLUTIONS PER MINUTE
RR	RETURN REGISTER
RS	REFRIGERANT SUCTION
RTU	ROOFTOP UNIT
RV	POWER TYPE ROOF VENTILATOR
SA	SUPPLY AIR
SAU	SOUND ATTENUATING UNIT
SD	SMOKE DAMPER
SF	SUPPLY FAN
SG	SUPPLY GRILLE
SL	STORM LOUVER
SP	STATIC PRESSURE (INCHES OF WATER)
SPP	SINGLE POINT POWER
SPS	STATIC PRESSURE SENSOR
SR	SUPPLY REGISTER
Sp Gr	SPECIFIC GRAVITY
SRV	SAFETY RELIEF VALVE
SS	SOLIDS SEPARATOR
STDBY	STANDBY
STL	STEEL
TG	TRANSFER GRILLE
THK	THICK
TOD	TOP OF DUCT
TSP	TOTAL STATIC PRESSURE
TWU	THRU WALL UNIT
TYP	TYPICAL
UC	UNIT COOLER
U/C	UNDER CUT
UH	UNIT HEATER
UV	UNIT VENTILATOR
VD	VOLUME DAMPER (MANUAL)
VI	VIBRATION ISOLATOR
VAV	VARIABLE AIR VOLUME
VIV	VARIABLE INLET VANE
VP	VACUUM PUMP
VR	VACUUM STEAM CONDENSATE RETURN
V	VALVE, VENT
VTR	VENT THROUGH ROOF
Wb	WET BULB TEMPERATURE, °F
WC	WALL CAP
WH	WALL HEATER
W	WIDE
W/	WITH
WMS	WIRE MESH SCREEN
W/W ENCL	WALL TO WALL ENCLOSURE
WSHP	WATER SOURCE HEAT PUMP

DUCTWORK SYMBOLS

- DEMOLITION OF DUCTWORK/EQUIPMENT
- EXISTING DUCTWORK/EQUIPMENT TO REMAIN
- NEW DUCTWORK/EQUIPMENT
- UP DN — SUPPLY DUCT (UP & DOWN)
- UP DN — RETURN OR RELIEF (UP & DOWN)
- UP DN — EXHAUST (UP & DOWN)
- SUPPLY DIFFUSER
- RETURN GRILLE
- EXHAUST GRILLE
- A" ø — ROUND DUCT
- A" X B" — FLAT - OVAL DUCT
- SOUND ATTENUATOR
- R — INCLINED RISE, IN DIRECTION OF AIR FLOW
- D — INCLINED DROP, IN DIRECTION OF AIR FLOW
- FC — FLEXIBLE CONNECTION
- FC — FLEXIBLE CONNECTOR
- VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES)
- STANDARD RADIUS ELBOWS
- LOUVER
- # X # DG # CFM — DOOR GRILLE
- 1" U.C. # CFM — 1" UNDERCUT DOOR
- FD/SD — COMBINATION FIRE & SMOKE DAMPER
- FD — FIRE DAMPER
- SD — SMOKE DAMPER
- VD — VOLUME DAMPER (BALANCING)
- BDD — BACK DRAFT DAMPER
- MOD — MOTOR OPERATED DAMPER
- ACOUSTIC - THERMAL LINING
- TRANSITION SQUARE TO ROUND
- FLEXIBLE DUCT
- COIL
- AD — DUCT ACCESS DOOR
- MD — MANUAL VOLUME DAMPER
- CD-# CFM / CR CFM — FOR TYPICAL 24"x24" SUPPLY'S AND RETURNS
- # X # EG # CFM — EXHAUST GRILLE
- # X # SG # CFM — SUPPLY GRILLE
- # X # RG # CFM — RETURN GRILLE
- CD-# # CFM — 3-WAY BLOW
- CD-# # CFM — 2-WAY CORNER BLOW
- CD-# # CFM — 2-WAY BLOW
- CD-# # CFM — 1-WAY BLOW

CONTROLS

- T H — ROOM CONTROL: THERMOSTAT, HUMIDISTAT (MOUNTING HEIGHT 48" AFF)
- T — REMOTE BULB THERMOSTAT
- T — DUCT OR PIPE THERMOSTAT (NOTE: PROVIDE (12" MIN LENGTH IN DUCT WHEN SPACE PERMITS)
- T — DUCT THERMOSTAT WITH AVERAGING ELEMENT
- T H — ROOM SENSOR: TEMPERATURE, HUMIDITY (MOUNTING HEIGHT 48" AFF)
- T — DUCT OR PIPE TEMP. SENSOR (12" MIN LENGTH IN DUCT WHEN SPACE PERMITS)
- H — DUCT HUMIDITY SENSOR (12" MIN LENGTH IN DUCT WHEN SPACE PERMITS)
- Dp — DUCT DEWPOINT SENSOR (12" MIN LENGTH IN DUCT WHEN SPACE PERMITS)
- Sp — DUCT STATIC PRESSURE SENSOR (12" MIN LENGTH IN DUCT WHEN SPACE PERMITS)
- T — DUCT TEMP SENSOR WITH AVERAGING ELEMENT
- T C T C — GUARD ON THERMOSTAT/SENSOR (MOUNTING HEIGHT 48" AFF)
- DSD — DUCT SMOKE DETECTOR
- FS — FLOW SWITCH
- INDICATOR LIGHT
- OR — OVERRIDE SWITCH
- CO2 TH — CO2 SENSOR/ROOM SENSOR TEMPERATURE, HUMIDITY, MOUNTING HEIGHT 48" AFF.

GENERAL NOTES

1. MECHANICAL CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, FEES AND PERMITS FOR A COMPLETE INSTALLATION. ALL WORK SHALL COMPLY WITH APPLICABLE CODES AND STANDARDS.
2. ALL COMPONENTS REQUIRED FOR A COMPLETE INSTALLATION ARE NOT SHOWN ON THE DRAWINGS. REFER TO EQUIPMENT INSTALLATION INSTRUCTIONS FOR ADDITIONAL REQUIREMENTS, INCLUDING REQUIRED CONNECTION LOCATIONS, TYPES, & SIZES.
3. UNLESS SPECIFICALLY DIMENSIONED, THE WORK SHOWN ON THE DRAWINGS IS DIAGRAMMATIC ONLY TO SHOW GENERAL ARRANGEMENTS. THE DRAWINGS ARE NOT TO BE SCALED. PIPE AND DUCT ROUTING AND EQUIPMENT CONNECTION LOCATIONS SHOWN ON DRAWINGS ARE APPROXIMATE. FIELD VERIFY CLEARANCES, DIMENSIONS, MATERIALS, AND EQUIPMENT REQUIREMENTS PRIOR TO CONSTRUCTION. RELOCATE CONDUITS, PIPING HANGERS, ETC. AS REQUIRED.
4. IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO PERFORM ALL WORK NECESSARY TO PREPARE STRUCTURES FOR THE INSTALLATION OF MECHANICAL SYSTEMS. ALL HOLES, OPENINGS, AND DAMAGED MATERIALS CREATED DURING CONSTRUCTION SHALL BE PATCHED AND FINISHED.
5. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL CUTTING, PATCHING, FINISHING, AND PENETRATIONS REQUIRED BY THE INSTALLATIONS. ALL PENETRATIONS SHALL BE PATCHED AND SEALED. CUTTING OF BUILDING CONSTRUCTION MATERIALS SHALL CONFORM TO THE CHARACTERISTICS OF THE PARTICULAR MATERIAL INVOLVED AND SHALL NOT CREATE ANY STRUCTURAL WEAKNESS OR UNSIGHTLY APPEARANCE. ALL CUTTING SHALL MEET THE APPROVAL OF THE ARCHITECT AND/OR OWNER'S REPRESENTATIVE: COORDINATE WITH THIS PARTY BEFORE COMMENCING.
6. WHENEVER CONNECTIONS TO EXISTING FACILITIES ARE REQUIRED, THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE OWNER'S REPRESENTATIVE AND SCHEDULE THE WORK TO MINIMIZE INTERRUPTION OF SERVICE AND AVOID INTERFERENCE WITH NORMAL FUNCTION OF THE BUILDING AND/OR SURROUNDING WORK AREA. RELOCATED ITEMS SHALL BE INSTALLED IN COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS.
7. ALL WORK, EQUIPMENT AND MATERIALS SHALL BE PROTECTED AT ALL TIMES. ALL DUCT AND PIPE OPENINGS SHALL BE PROPERLY CAPPED OR PLUGGED DURING INSTALLATION.
8. WHERE REQUIRED FOR CLEARANCE, TO AVOID INTERFERENCE OR EQUIPMENT CONNECTIONS, THE MECHANICAL CONTRACTOR SHALL OFFSET PIPES, DUCTS OR CONDUITS. NECESSARY SPECIAL FITTINGS OR ADAPTERS SHALL BE PROVIDED TO MAINTAIN GOOD FLOW CHARACTERISTICS. PROPERLY DRAIN AND DRIP WHERE NECESSARY.
9. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS OWN PEOPLE. COMPLY WITH ALL OWNER'S SITE SAFETY CONDITIONS.
10. MECHANICAL CONTRACTOR SHALL MOUNT ALL THERMOSTATS AND ADJUSTABLE SENSORS IN FINISHED OCCUPIED ROOMS AT ADA HEIGHT OF 48 INCHES.
11. ALL VALVES SHALL HAVE EXTENDED STEMS TO PLACE THE HANDLE OUTSIDE OF PIPE INSULATION.
12. FOR ANY MATERIALS AND EQUIPMENT REMOVED DURING THE DEMOLITION PHASE OF THE PROJECT, THE OWNER'S REPRESENTATIVE SHALL APPROVE FINAL DISPOSITION OF ALL SUCH MATERIAL FOR RETENTION AND STORAGE, OR REMOVAL FROM THE SITE BY THE CONTRACTOR.

PIPING SYMBOLS

HEATING

- HPS — HIGH PRESSURE STEAM (16 PSIG & ABOVE)
- HPC — HIGH PRESSURE STEAM CONDENSATE RETURN
- LPS — LOW PRESSURE STEAM (15 PSIG & BELOW)
- LPC — LOW PRESSURE STEAM CONDENSATE RETURN
- VR — VACUUM STEAM CONDENSATE RETURN
- PD — CONDENSATE PUMP DISCHARGE
- BF — FEED WATER PUMP DISCHARGE
- BO — BLOW OFF/BLOW DOWN
- HWS — HOT WATER SUPPLY
- HWR — HOT WATER RETURN
- HTWS — HIGH TEMP, HOT WATER SUPPLY
- HTWR — HIGH TEMP, HOT WATER RETURN
- GHS — HOT GLYCOL-WATER HEATING SUPPLY
- GHR — HOT GLYCOL-WATER HEATING RETURN
- V — VENT LINE, ATMOSPHERIC
- GTWS — GEO THERMAL WATER SUPPLY
- GTWR — GEO THERMAL WATER RETURN

AIR CONDITIONING

- RL — REFRIGERANT LIQUID
- RS — REFRIGERANT SUCTION
- RHG — REFRIGERANT HOT GAS
- C — CONDENSER WATER SUPPLY
- CR — CONDENSER WATER RETURN
- CWS — CHILLED WATER SUPPLY
- CWR — CHILLED WATER RETURN
- GC — CHILLED GLYCOL-WATER SUPPLY
- GCR — CHILLED GLYCOL-WATER RETURN
- MAKE-UP WATER
- D — DRAIN LINE

COMBINATION AIR CONDITIONING AND HEATING

- DTS — DUAL TEMPERATURE (CHILLED WATER/HOT WATER HEATING) SUPPLY
- DTR — DUAL TEMPERATURE (CHILLED WATER/HOT WATER HEATING) RETURN
- HPWS — HEAT PUMP WATER SUPPLY
- HPWR — HEAT PUMP WATER RETURN

VALVES

- GATE VALVE
- GLOBE VALVE
- CHECK VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CV — CONTROL VALVE
- BALANCING VALVE
- TRIPLE DUTY VALVE
- TWO WAY CONTROL VALVE (ELECTRONIC ACTUATOR)
- THREE WAY CONTROL VALVE (ELECTRONIC ACTUATOR)
- TWO WAY CONTROL VALVE (PNEUMATIC ACTUATOR)
- THREE WAY CONTROL VALVE (PNEUMATIC ACTUATOR)
- PRESSURE REDUCING VALVE
- SAFETY RELIEF VALVE

GENERAL

- D — DIRECTION OF PIPE PITCH (DOWN)
- U — DIRECTION OF PIPE PITCH (UP)
- DIRECTION OF FLOW
- ANCHOR
- REDUCER OR INCREASER
- ECCENTRIC REDUCER
- TOP CONNECTION
- BOTTOM CONNECTION
- CAP OR PLUG
- BLANK FLANGE
- ELBOW DOWN
- CO — CLEANOUT
- UNION OR FLANGE
- ELBOW UP
- POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK
- POINT BETWEEN EXISTING REMOVAL WORK AND EXISTING TO REMAIN
- BIT — INVERTED BUCKET TRAP SET INCLUDING PIPING ACCESSORIES (SEE STD. DETAIL)
- F & T — FLOAT & THERMOSTATIC TRAP SET INCLUDING PIPING ACCESSORIES (SEE STD. DETAIL)
- TS — THERMOSTATIC TRAP
- TD — THERMODYNAMIC TRAP
- STRAINER
- T — THERMOMETER
- PRESSURE GAUGE WITH GAUGE COCK
- WATER FLOW MEASURING DEVICE
- EXISTING WORK TO BE REMOVED
- V — AIR VENT
- MOMENT GUIDE
- FLEXIBLE COUPLING
- EC — EXPANSION COMPENSATOR WITH GUIDES
- EJ — EXPANSION JOINT WITH GUIDES
- HOSE END CONNECTION
- 4.0 — DOOR LOUVERED (INDICATES SQ FT OF AN AREA)
- FIN TUBE ENCLOSURE WITH END CAPS
- PUMP
- UNIT HEATER
- AIR SEPARATOR

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MARK	DATE	DESCRIPTION
3	02/27/15	ADDENDUM NO. 1
2	02/16/15	BID PAC A
1	02/13/15	DESIGN DEVELOPMENT

PROJECT NO: 1425
FILE NAME
DRAWN BY: DEG
CHECKED BY: SAJ

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SHEET TITLE
LEGEND SHEET
MECHANICAL

M-001

GENERAL DEMOLITION NOTES

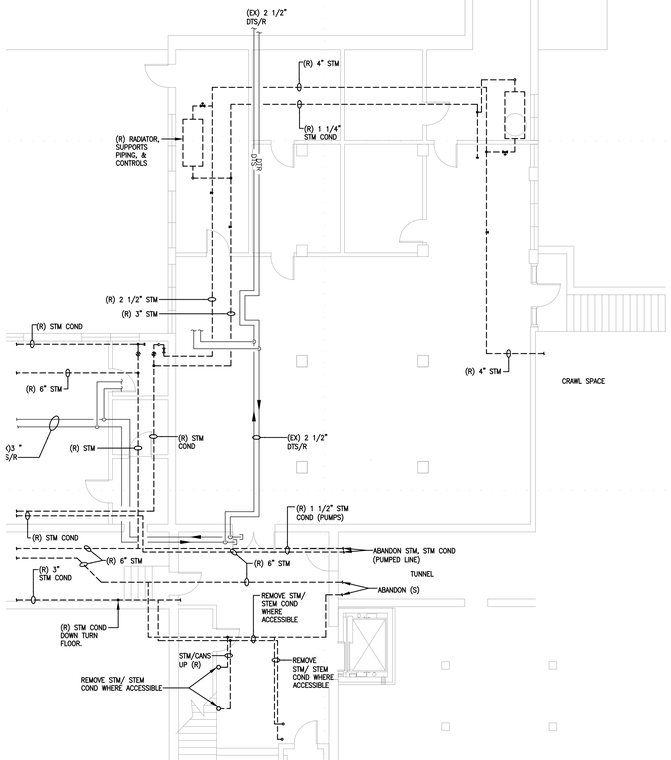
- - - - - -	REMOVE
(R)	REMOVE
(EX)	EXISTING TO REMAIN

PIPING REMOVALS:

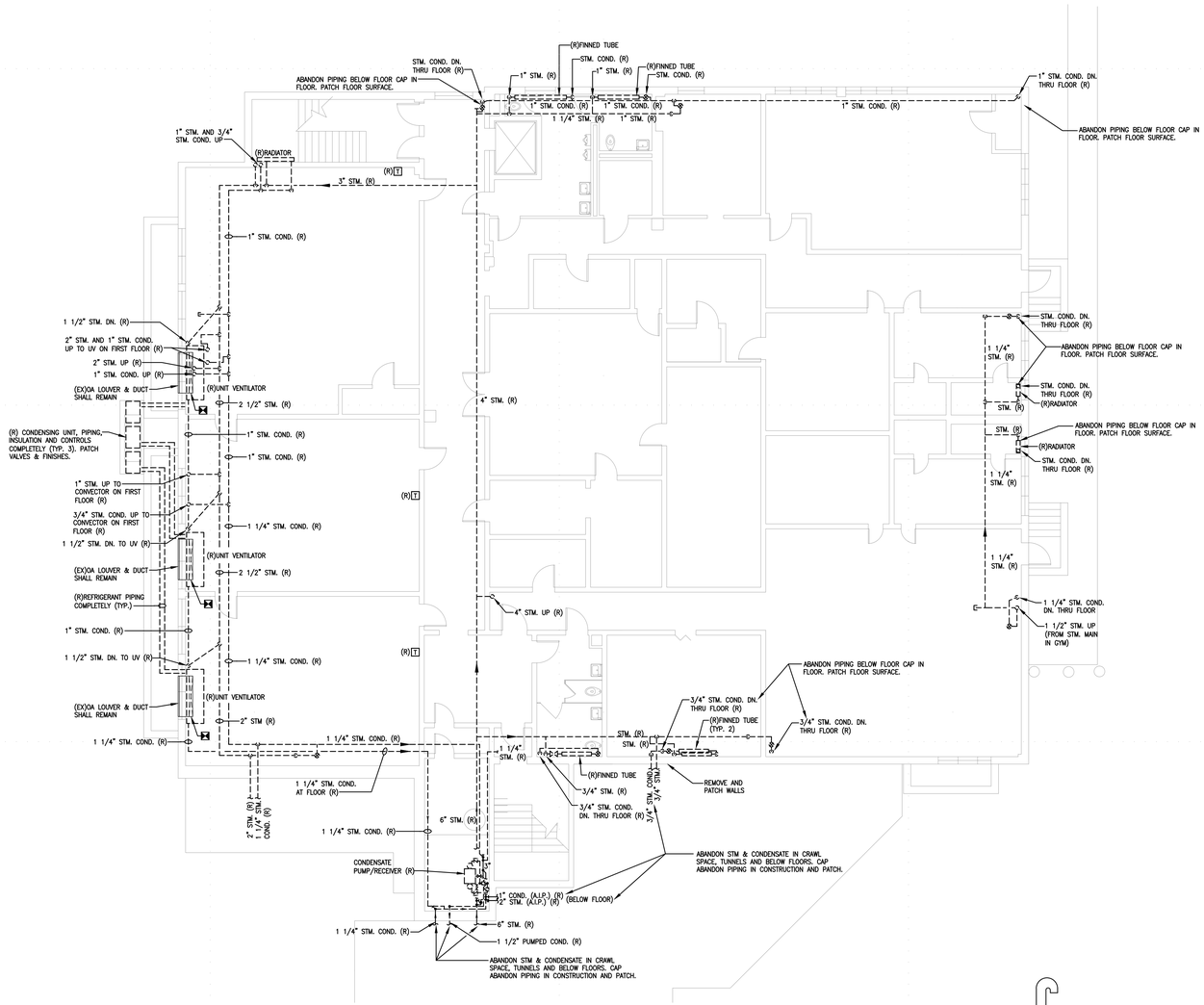
REMOVE ACCESSIBLE STEAM AND CONDENSATE PIPING, EXPOSED OR ABOVE ACCESSIBLE CEILINGS. ABANDON INACCESSIBLE PIPING. CAP ABANDONED PIPING IN CONSTRUCTION. PATCH CONSTRUCTION AND ROOM FINISHES. PIPING REMOVALS SHALL INCLUDE BUT NOT LIMITED TO PIPING VALVES ACCESSORIES INSULATION, HANGERS AND SUPPORTS.

THERMOSTAT REMOVALS:

REMOVE THERMOSTAT. REMOVE ACCESSIBLE WIRING/ CONDUIT. CAP AND SAFE OFF CONDUITS ABANDONED. COORDINATE WITH NEW WORK. PATCH WALLS AND ROOM FINISHES.



A1 PARTIAL BASEMENT PLAN - DEMOLITION - MECHANICAL
SCALE: 1/4" = 1'-0"



C1 PARTIAL BASEMENT PLAN - DEMOLITION - PIPING
SCALE: 1/8" = 1'-0"

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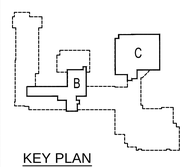

KEY PLAN

PROJECT

2014 RCCSD
CAPITAL IMPROVEMENTS

16 IDELLA AVENUE
WILMINGTON, DELAWARE 19804

RICHARDSON PARK
ELEMENTARY SCHOOL

OWNER

RED CLAY CONSOLIDATED
SCHOOL DISTRICT
1502 SPRUCE AVENUE
WILMINGTON, DE 19805

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3	02/27/15	ADDENDUM NO. 1
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1	02/13/15	DESIGN DEVELOPMENT

PROJECT NO: 1425
FILE NAME
DRAWN BY: DEG
CHECKED BY: SAJ

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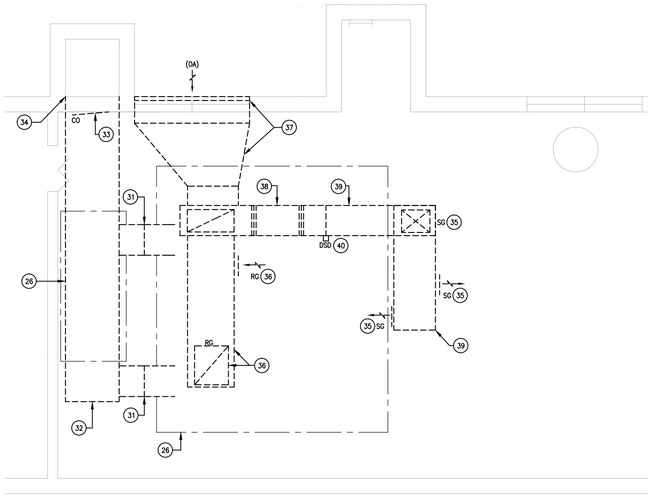
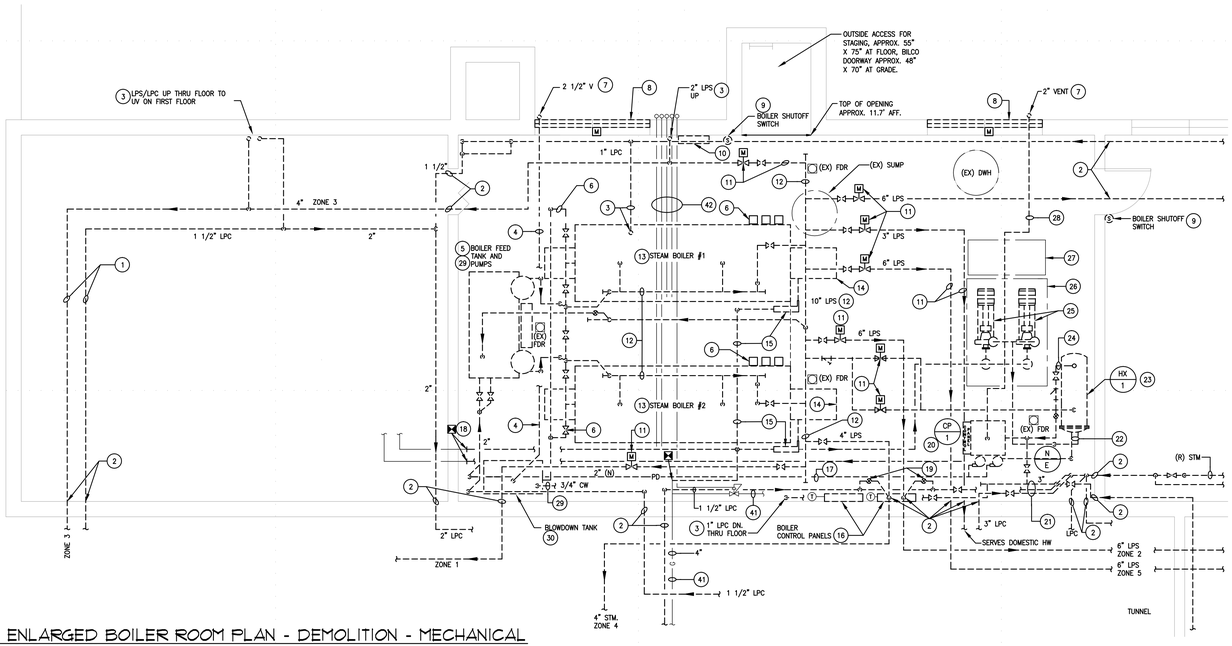
SHEET TITLE

PARTIAL BASEMENT PLANS
DEMOLITION
MECHANICAL

MD-100



C1 ENLARGED BOILER ROOM PLAN - DEMOLITION - MECHANICAL
SCALE: 1/4" = 1'-0"



A1 ENLARGED BOILER ROOM PLAN - DEMOLITION - MECHANICAL
SCALE: 1/4" = 1'-0"

BOILER ROOM NOTES

1. REMOVE ALL STEAM AND CONDENSATE PIPING, INSULATION, HANGERS, AND ACCESSORIES.
2. FILL OPENING IN WALLS WITH NON-SHRINK GROUT FLUSH WITH ADJOINING SURFACES, BOTH SIDES WHERE ACCESSIBLE, TO MAINTAIN FIRE RATING OF BOILER ROOM.
3. REMOVE ALL BRANCH STEAM AND CONDENSATE PIPING, INSULATION, HANGERS, AND ACCESSORIES. FILL OPENINGS IN FLOOR WITH NON-SHRINK GROUT FLUSH WITH ADJOINING SURFACES, ABOVE AND BELOW FLOOR WHERE ACCESSIBLE, TO MAINTAIN FIRE RATING OF BOILER ROOM.
4. REMOVE ALL STEAM VENT PIPING, INSULATION, HANGERS, AND ACCESSORIES FROM BLOWDOWN TANK CONNECTION THROUGH EXTERIOR WALL.
5. REMOVE BOILER FEED TANK, PUMPS, CONTROLS, AND ACCESSORIES. DISCONNECT POWER AND COORDINATE ADDITIONAL WORK WITH THE CONTRACTOR FOR DIVISION 26 – ELECTRIC.
6. REMOVE ALL BOILER FEED PIPING, INSULATION, VALVES, BOILER FEEDWATER AND WATER LEVEL CONTROLS, WATER COLUMN BLOWDOWN LINES AND DRAINS, SUPPORTS, AND ACCESSORIES BETWEEN BOILER FEED UNIT AND EACH BOILER.
7. REMOVE VENT LINE, SUPPORTS, AND ACCESSORIES FROM WALL PENETRATION UP TO TERMINATION NEAR ROOF. FILL OPENING IN WALLS WITH NON-SHRINK GROUT FLUSH WITH ADJOINING SURFACES, BOTH SIDES WHERE ACCESSIBLE.
8. REMOVE MOTOR OPERATED LOUVER/DAMPER ASSEMBLY, CONTROLS AND WIRING TO SOURCE, SUPPORTS, AND ACCESSORIES TO ORIGINAL MASONRY WALL OPENING. MAINTAIN WALL OPENING FOR REUSE, SAFE OFF DURING CONSTRUCTION TO MAINTAIN SECURITY OF BUILDING.
9. COORDINATE WITH THE WORK OF DIVISION 26 – ELECTRIC FOR REMOVAL OF BOILER EMERGENCY STOP SWITCHES FROM SOURCE TO EACH BOILER CONTROL PANEL.
10. COORDINATE WITH THE OWNER'S ATC CONTRACTOR FOR WORK WITHIN THIS EXISTING PANEL THAT SHALL REMAIN.
11. REMOVE ALL STEAM ZONE CONTROL VALVES, ZONE PIPING, INSULATION, VALVES, HANGERS, CONTROL WIRING, AND ACCESSORIES BETWEEN STEAM HEADER AND PENETRATION OF BOILER ROOM WALLS.
12. REMOVE BOILER STEAM MANIFOLD PIPING, STEAM HEADER PIPING, INSULATION, VALVES, HANGERS, DRIP TRAPS, ALL DRIP LEG PIPING, AND ACCESSORIES.
13. REMOVE SECTIONAL CAST IRON BOILERS, INSULATION, JACKET, SAFETY RELIEF VALVES, AND ACCESSORIES.
14. REMOVE GAS FIRED BURNER ASSEMBLY, CONTROLS, SUPPORTS, CONTROL WIRING TO BOILER CONTROL PANELS, AND ACCESSORIES. DISCONNECT POWER AND COORDINATE ADDITIONAL WORK WITH THE CONTRACTOR FOR DIVISION 26 – ELECTRIC.
15. REMOVE NATURAL GAS TRAIN COMPONENTS, SAFETY DEVICES, VENT LINES AS NOTED, VALVES, SUPPORTS, BRANCH GAS PIPING, AND ACCESSORIES. COORDINATE ADDITIONAL WORK TO MAINTAIN NATURAL GAS SERVICE WITH THE CONTRACTOR FOR DIVISION 22 – PLUMBING.
16. REMOVE BOILER CONTROL PANELS, INTERCONNECTING CONTROL WIRING TO BOILER/BURNER ASSEMBLY, SUPPORTS, AND ACCESSORIES. DISCONNECT POWER AND COORDINATE ADDITIONAL WORK WITH THE CONTRACTOR FOR DIVISION 26 – ELECTRIC.
17. REMOVE PUMP DISCHARGE PIPING, INSULATION, VALVES, HANGERS, AND ACCESSORIES FROM PACKAGED ASSEMBLY CP-1 TO BOILER FEED UNIT.
18. REMOVE HEATING WATER SUPPLY AND RETURN WATER PIPING, INSULATION, VALVES, SUPPORTS, AND ACCESSORIES, UP TO POINTS INDICATED. MAINTAIN FOR REUSE.
19. REMOVE ALL DRIP TRAP ASSEMBLIES, VALVES, BRANCH PIPING, INSULATION, SUPPORTS, AND ACCESSORIES.
20. REMOVE PACKAGED DUPLEX CONDENSATE RECEIVER/PUMPS ASSEMBLY, CONTROLS, SUPPORTS, AND ACCESSORIES. DISCONNECT POWER AND COORDINATE ADDITIONAL WORK WITH THE CONTRACTOR FOR DIVISION 26 – ELECTRIC.
21. REMOVE ALL CONDENSATE RETURN PIPING, INSULATION, VALVES, SUPPORTS, AND ACCESSORIES.
22. REMOVE HEATING WATER SUPPLY AND RETURN WATER PIPING, INSULATION, VALVES, SUPPORTS, CONTROL DEVICES, AND ACCESSORIES FROM HEAT EXCHANGER TO PUMPS, AND TO WORK DESCRIBED IN NOTE 18.
23. REMOVE HEAT EXCHANGER, INSULATION, CONTROLS, VALVES, SUPPORTS, AND ACCESSORIES.
24. REMOVE CONDENSATE RETURN PIPING, INSULATION, VALVES, TRAPS, SUPPORTS, AND ACCESSORIES FROM HEAT EXCHANGER TO PACKAGED RECEIVER/PUMPS UNIT.
25. REMOVE HEATING WATER PUMP, BASE, SUPPORTS, AND ACCESSORIES. DISCONNECT POWER AND COORDINATE ADDITIONAL WORK WITH THE CONTRACTOR FOR DIVISION 26 – ELECTRIC.
26. HOUSEKEEPING PAD SHALL REMAIN.
27. AIR COMPRESSOR ASSEMBLY AND HOUSEKEEPING PAD TO REMAIN.
28. REMOVE VENT PIPING, INSULATION, HANGERS, AND ACCESSORIES FROM CONNECTION ON PACKAGED DUPLEX CONDENSATE RECEIVER/PUMPS ASSEMBLY THROUGH EXTERIOR WALL.
29. COORDINATE REMOVAL OF COLD WATER MAKEUP LINE TO EACH SERVICE POINT WITH THE CONTRACTOR FOR DIVISION 22 – PLUMBING.
30. REMOVE SYSTEM BLOWDOWN TANK ASSEMBLY, INSULATION, VALVES, SUPPORTS, AND ACCESSORIES. HOUSEKEEPING PAD SHALL REMAIN.
31. REMOVE BOILER VENT, DRAFT CONTROLS, VENT DAMPER, INSULATION, AND ACCESSORIES.
32. REMOVE ALL BOILER BREECHING, INSULATION, SUPPORTS, AND ACCESSORIES UP TO THE CHIMNEY OPENING.
33. REMOVE CHIMNEY CLEANOUT DOOR ASSEMBLY, REMOVE ALL ACCUMMULATION OF DEBRIS FROM BASE OF CHIMNEY ENCLOSURE, AND SEAL MASONRY OPENING WITH MATERIALS TO MATCH ADJOINING WORK.
34. SEAL BREECHING OPENING IN CHIMNEY TO MATCH ADJOINING WORK. PROVIDE MINIMUM 16GA. GALVANIZED STEEL CLOSURE PLATE OVER TOP OF CHIMNEY SECURED TO BRICK CROWN, CROSS BREAK TO SHED ANY ACCUMMULATION OF WEATHER.
35. REMOVE ALL SUPPLY AIR GRILLES AND ACCESSORIES.
36. REMOVE ALL RETURN AIR GRILLES AND ACCESSORIES.
37. REMOVE ALL OUTSIDE AIR INTAKE DUCTWORK, INSULATION, SUPPPORTS, AND ACCESSORIES FROM LOUVER OPENING TO MAIN DUCT. COORDINATE PROTECTION OF OPENING WITH THE WORK OF NOTE 8.
38. REMOVE INLINE SUPPLY FAN, SUPPORTS, CONTROLS, AND ACCESSORIES. DISCONNECT POWER AND COORDINATE ADDITIONAL WORK WITH THE CONTRACTOR FOR DIVISION 26 – ELECTRIC.
39. REMOVE ALL SUPPLY AIR DUCTWORK, INSULATION, SUPPORTS, AND ACCESSORIES.
40. REMOVE DUCT MOUNTED SMOKE DETECTOR. COORDINATE ADDITIONAL WORK WITHIN THE FIRE ALARM SYSTEM WITH THE CONTRACTOR FOR DIVISION 26 – ELECTRIC.
41. EXISTING NATURAL GAS PIPING AND REGULATOR SHALL REMAIN.
42. 1" GAS VENT PIPING SHALL REMAIN.

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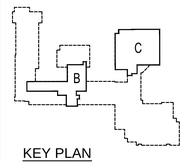

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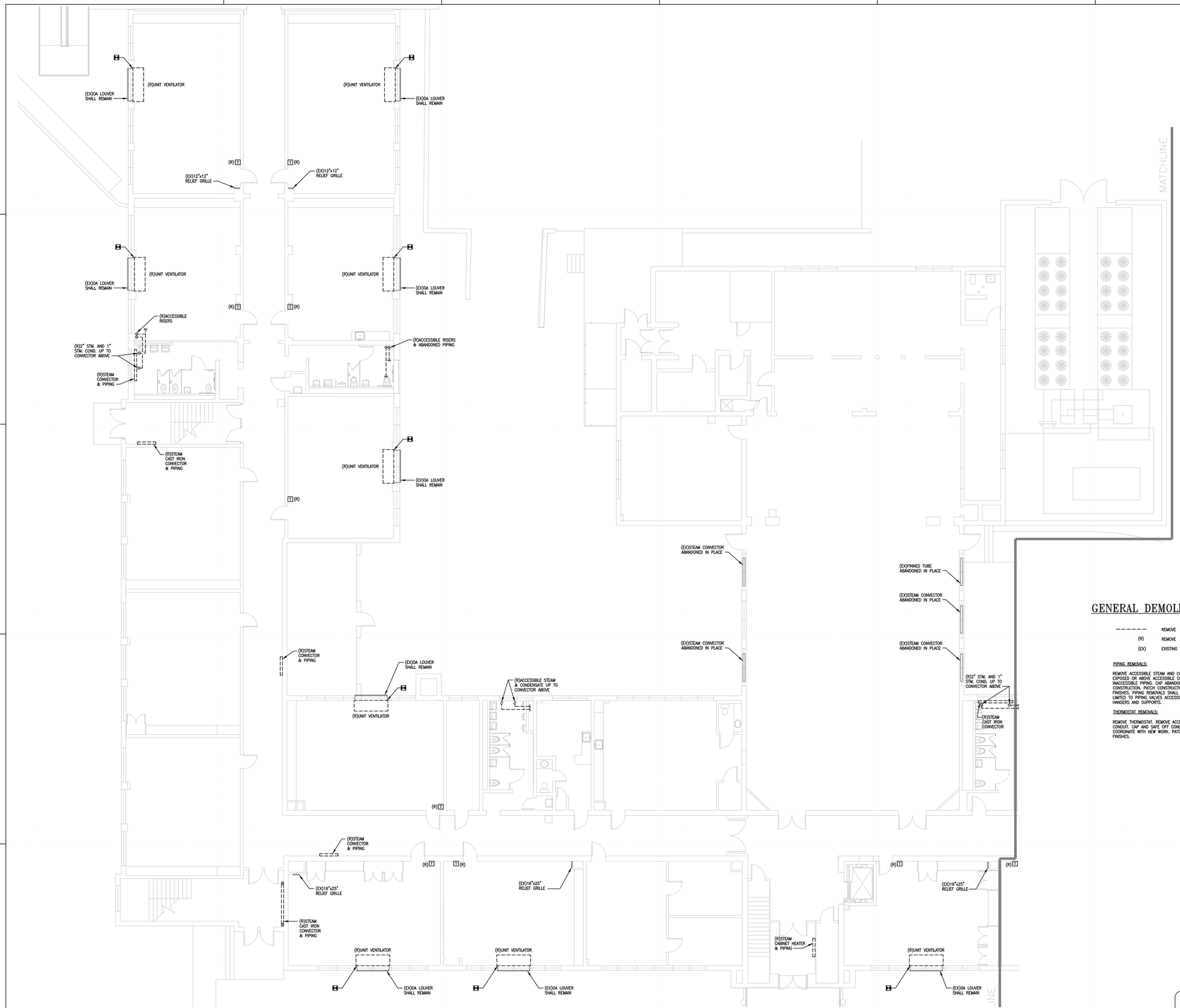
SHEET TITLE
ENLARGED
BOILER ROOM PLANS
DEMOLITION
MECHANICAL

MD-101



A1 PARTIAL FIRST FLOOR PLAN - DEMOLITION - MECHANICAL

SCALE: 1/8" = 1'-0"

GENERAL DEMOLITION NOTES

- - - - - -	REMOVE
(R)	REMOVE
(EX)	EXISTING TO REMAIN

PIPING REMOVALS:

REMOVE ACCESSIBLE STEAM AND CONDENSATE PIPING, EXPOSED OR ABOVE ACCESSIBLE CEILINGS. ABANDON INACCESSIBLE PIPING. CAP ABANDONED PIPING IN CONSTRUCTION. PATCH CONSTRUCTION AND ROOM FINISHES. PIPING REMOVALS SHALL INCLUDE BUT NOT LIMITED TO PIPING VALVES ACCESSORIES INSULATION, HANGERS AND SUPPORTS.

THERMOSTAT REMOVALS:

REMOVE THERMOSTAT. REMOVE ACCESSIBLE WIRING/ CONDUIT. CAP AND SAFE OFF CONDUITS ABANDONED. COORDINATE WITH NEW WORK. PATCH WALLS AND ROOM FINISHES.

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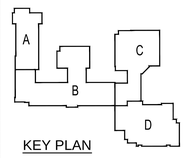

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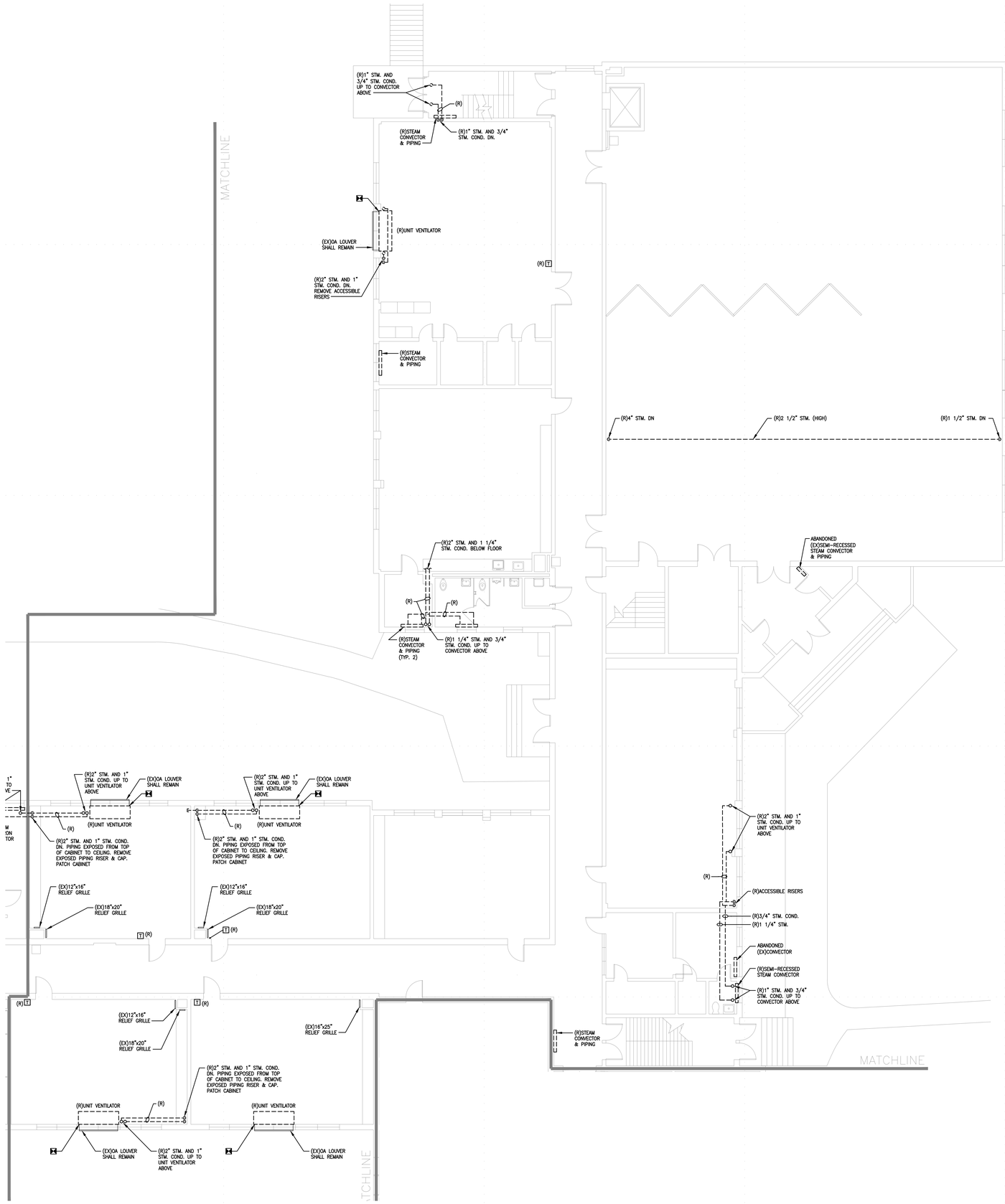
SHEET TITLE

PARTIAL FIRST FLOOR
PLAN DEMOLITION
MECHANICAL

MD-110



A1 PARTIAL FIRST FLOOR PLAN - DEMOLITION - MECHANICAL

SCALE: 1/8" = 1'-0"

GENERAL DEMOLITION NOTES

– – – – – –	REMOVE
(R)	REMOVE
(EX)	EXISTING TO REMAIN

PIPING REMOVALS:

REMOVE ACCESSIBLE STEAM AND CONDENSATE PIPING, EXPOSED OR ABOVE ACCESSIBLE CEILINGS. ABANDON INACCESSIBLE PIPING. CAP ABANDONED PIPING IN CONSTRUCTION. PATCH CONSTRUCTION AND ROOM FINISHES. PIPING REMOVALS SHALL INCLUDE BUT NOT LIMITED TO PIPING VALVES ACCESSORIES INSULATION, HANGERS AND SUPPORTS.

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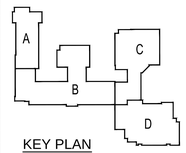

KEY PLAN

PROJECT

2014 RCCSD
CAPITAL IMPROVEMENTS

16 IDELLA AVENUE
WILMINGTON, DELAWARE 19804

RICHARDSON PARK
ELEMENTARY SCHOOL

OWNER

RED CLAY CONSOLIDATED
SCHOOL DISTRICT
1502 SPRUCE AVENUE
WILMINGTON, DE 19805

MARK	DATE	DESCRIPTION
3	02/27/15	ADDENDUM NO. 1
2	02/16/15	BID PAC A
1	02/13/15	DESIGN DEVELOPMENT

PROJECT NO: 1425
FILE NAME
DRAWN BY: DEG
CHECKED BY: SAJ

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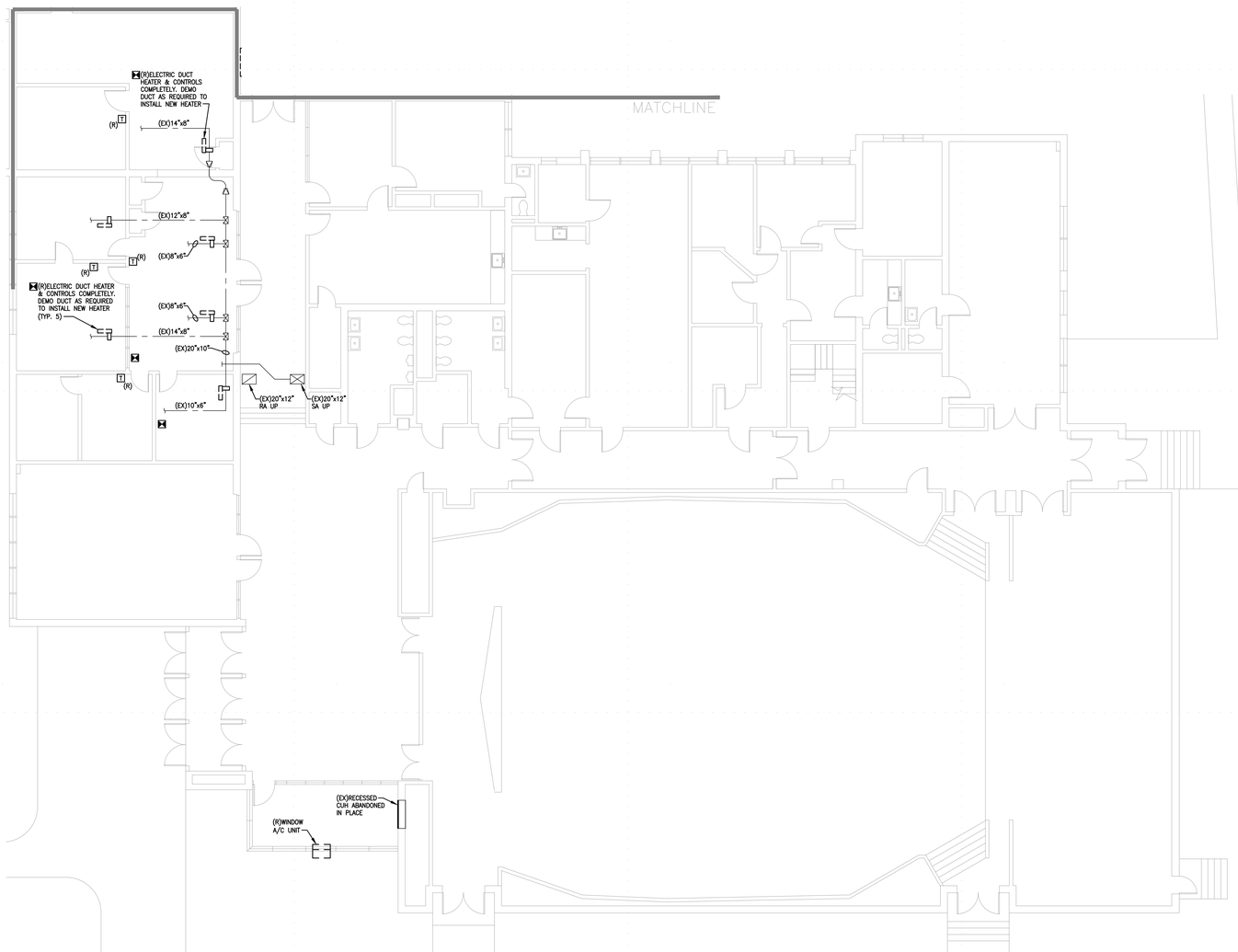
SHEET TITLE

PARTIAL FIRST FLOOR
PLAN DEMOLITION
MECHANICAL

MD-111



A1 PARTIAL FIRST FLOOR PLAN - DEMOLITION - MECHANICAL
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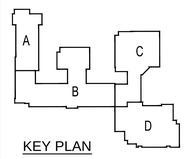

KEY PLAN

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2014 RCCSD
CAPITAL IMPROVEMENTS

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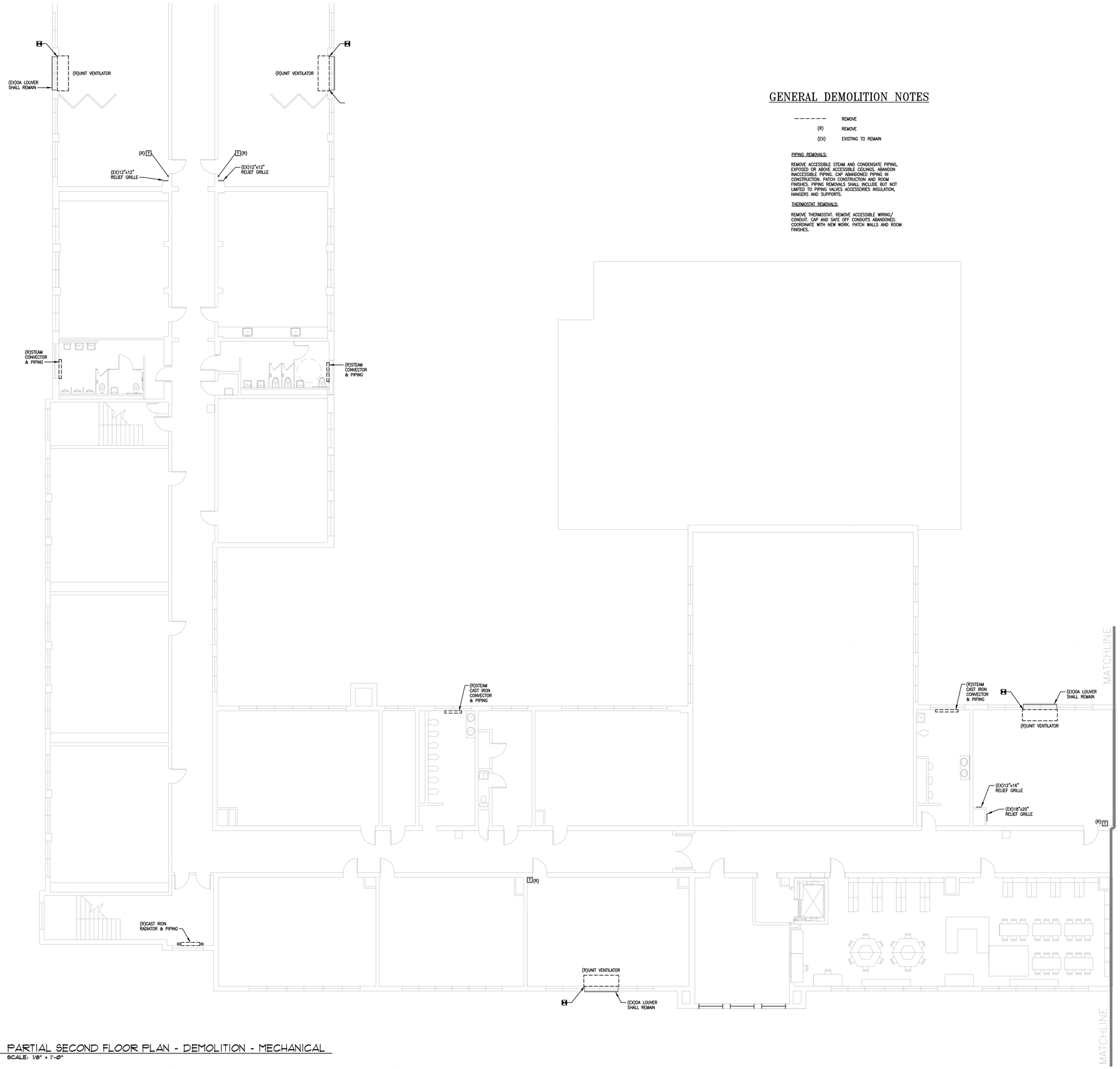
SHEET TITLE
PARTIAL FIRST FLOOR PLAN DEMOLITION MECHANICAL

MD-112



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A1 PARTIAL SECOND FLOOR PLAN - DEMOLITION - MECHANICAL
SCALE: 1/8" = 1'-0"

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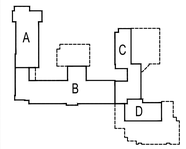

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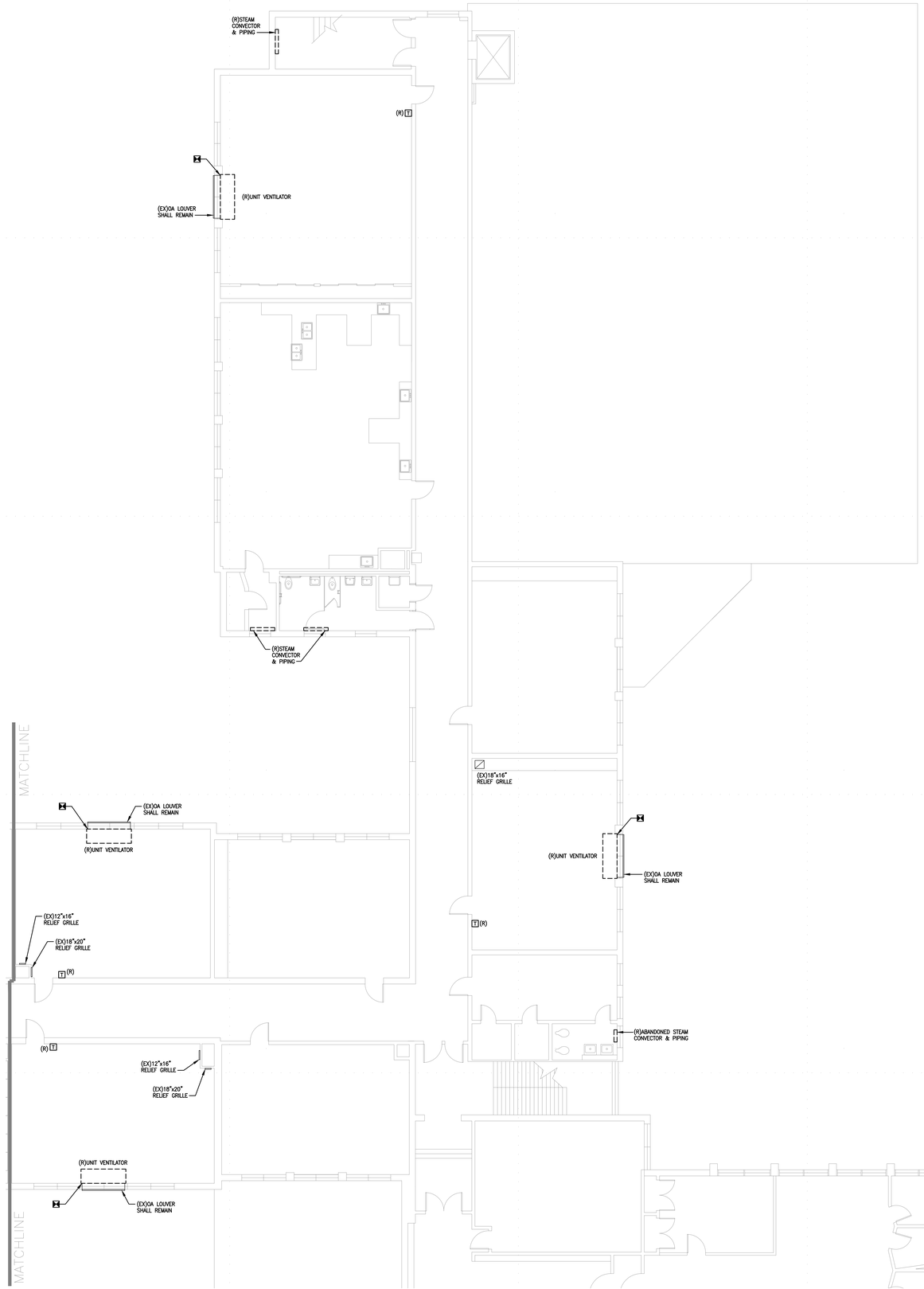
SHEET TITLE
PARTIAL SECOND FLOOR PLAN DEMOLITION MECHANICAL

MD-120



A1 PARTIAL SECOND FLOOR PLAN - DEMOLITION - MECHANICAL
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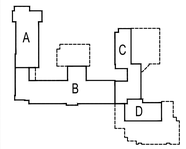

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2014 RCCSD
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SHEET TITLE
PARTIAL SECOND FLOOR PLAN DEMOLITION MECHANICAL

MD-121

GENERAL DEMOLITION NOTES

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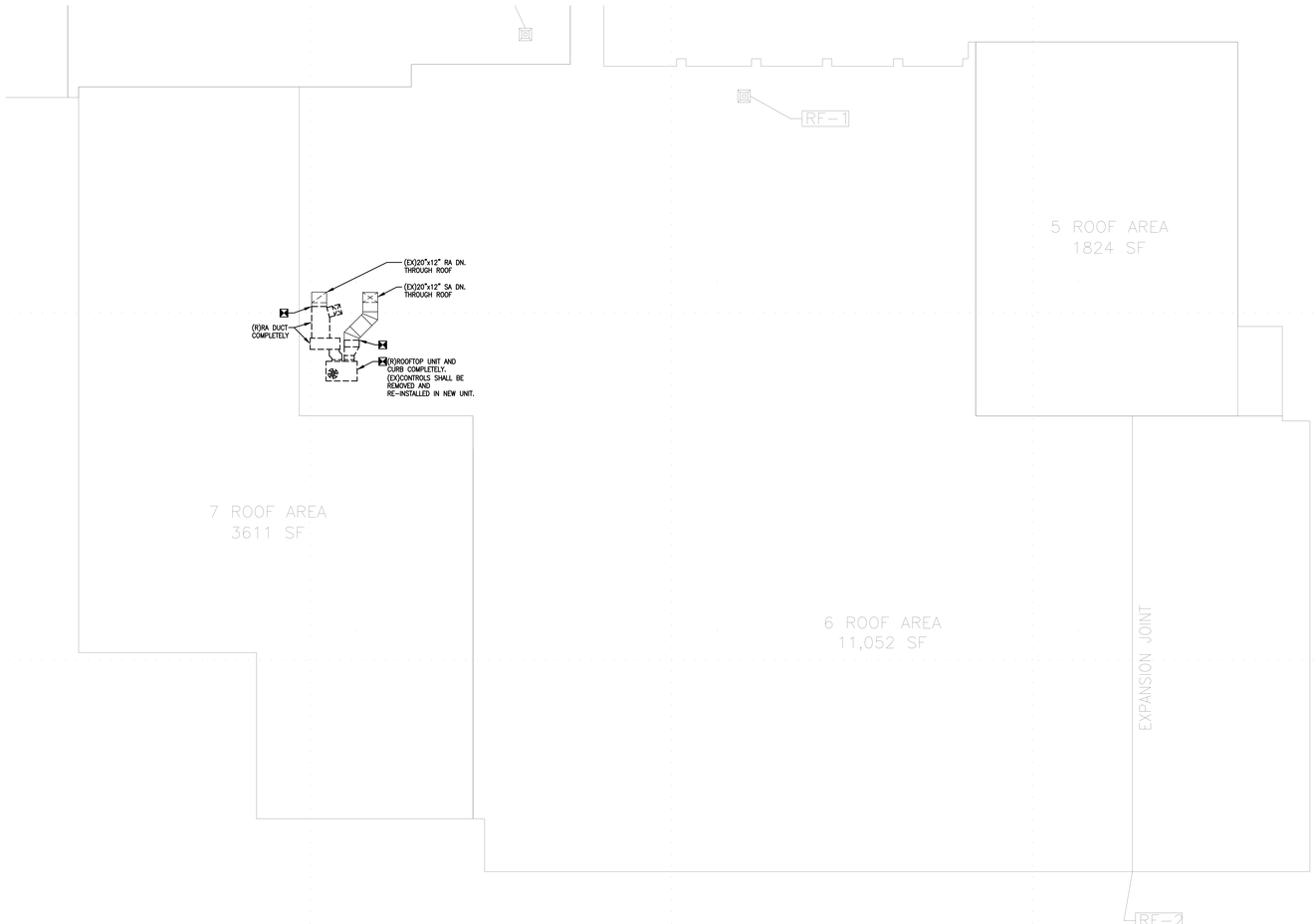

A1 PARTIAL ROOF PLAN - DEMOLITION - MECHANICAL
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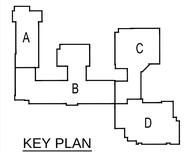

KEY PLAN

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SHEET TITLE

PARTIAL ROOF PLAN
DEMOLITION
MECHANICAL

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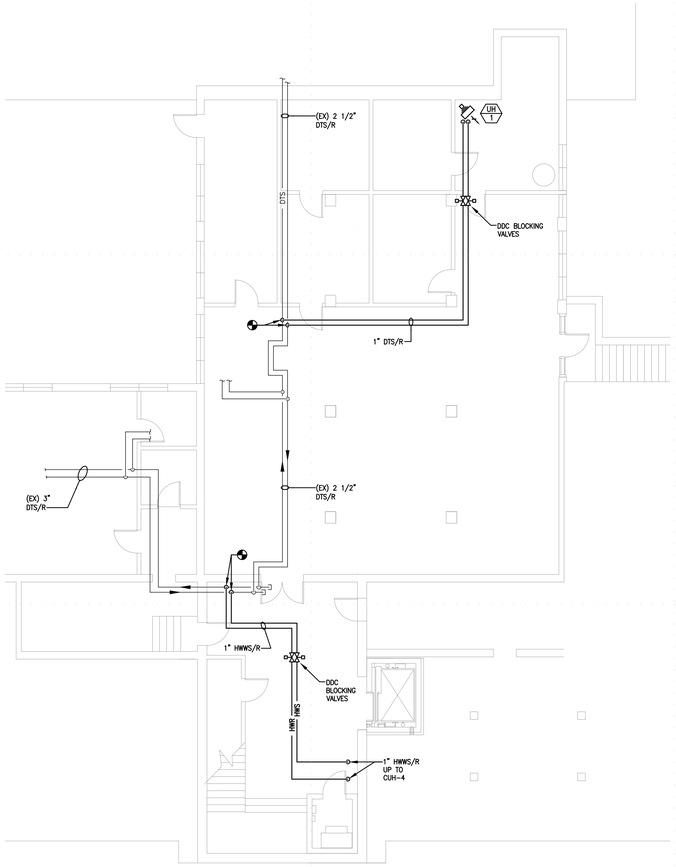
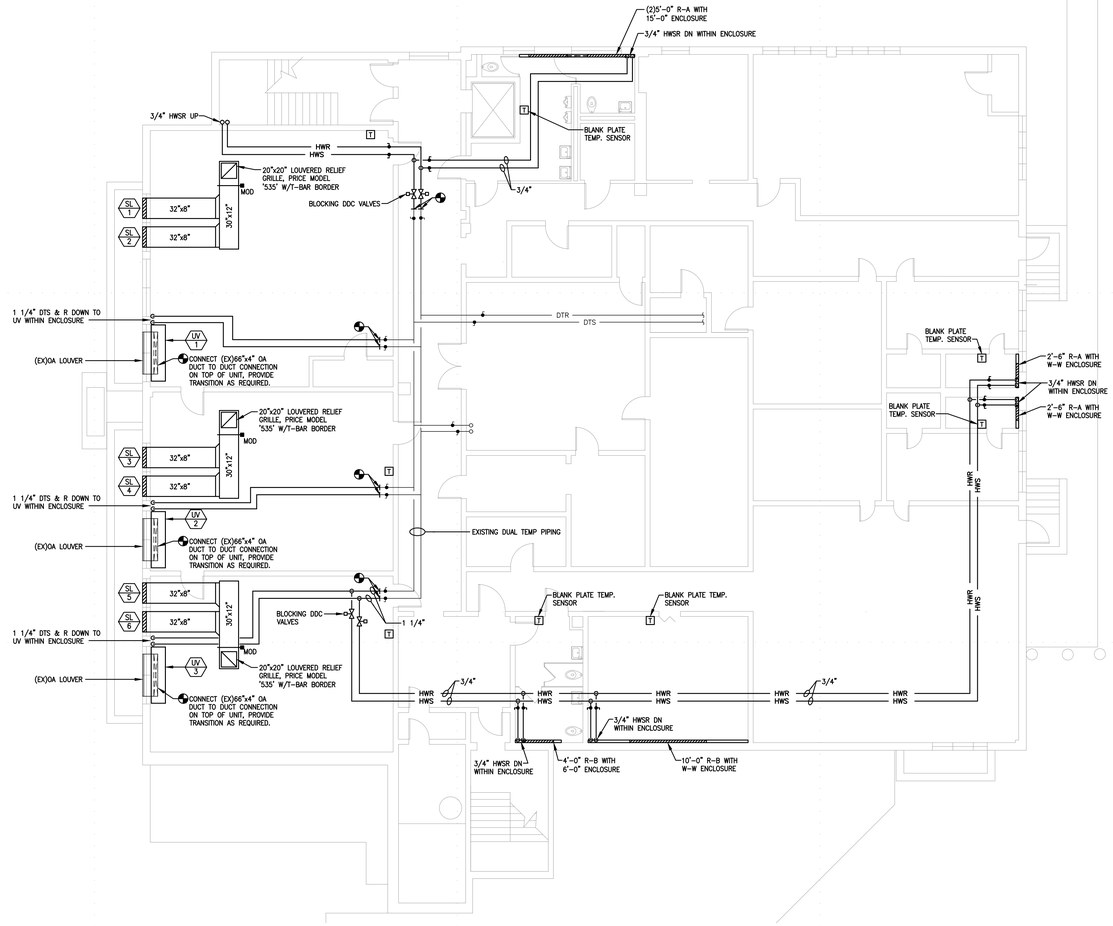
14.081

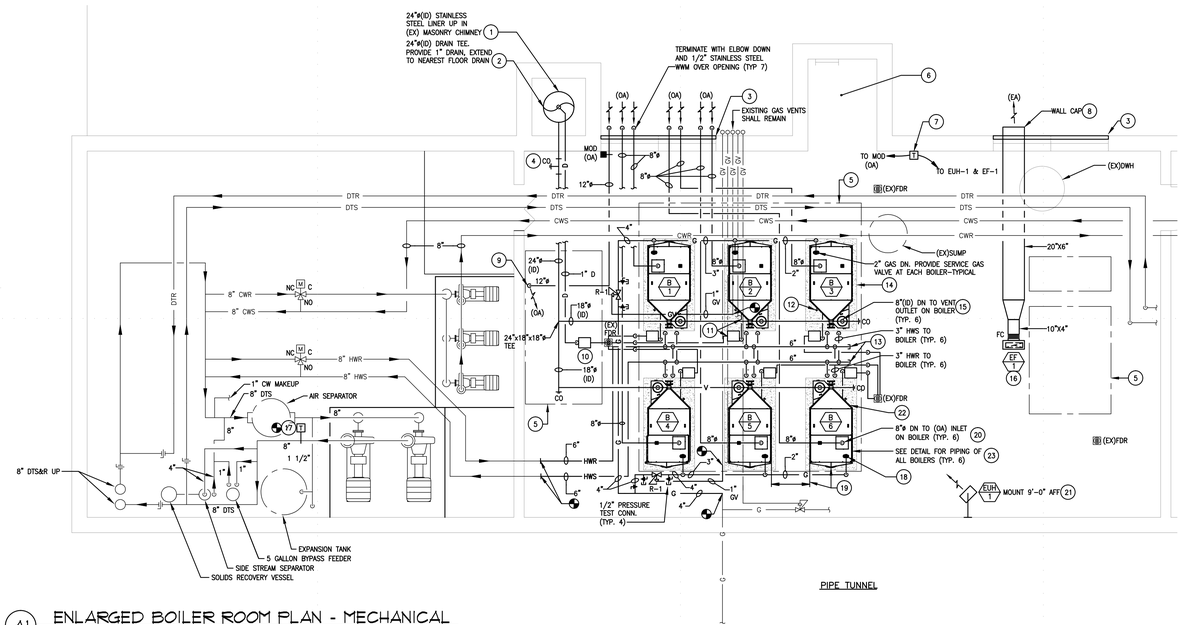
MD-130



C1 PARTIAL BASEMENT PLAN - MECHANICAL
SCALE: 1/8" = 1'-0"



C4 PARTIAL BASEMENT PLAN - MECHANICAL
SCALE: 1/8" = 1'-0"



A1 ENLARGED BOILER ROOM PLAN - MECHANICAL
SCALE: 1/4" = 1'-0"

MECHANICAL NOTES

1. EXTEND LINER UP THROUGH EXISTING MANSONRY CHIMNEY WITH SUPPORT BRACKET AT BASE. TERMINATE 6" MINIMUM ABOVE CROWN OF CHIMNEY WITH OPEN END. COORDINATE WITH THE WORK OF NOTE 34 ON DRAWING MD-100.
2. DRAIN LINE IS SHOWN OFFSET FOR CLARITY. SUPPORT UNDERNEATH VENT MANIFOLD WITH PITCH DOWN TO NEUTRALIZATION BASIN ON FLOOR.
3. PROVIDE 2" THICK INSULATED DOUBLE WALL ALUMINUM PANEL FULL SIZE OF MASONRY OPENING AFTER REMOVAL OF LOUVER ASSEMBLY, APPROXIMATELY 60"HIGH X 90"WIDE. PROVIDE ANODIZED FINISH BOTH SIDES. SEAL WEATHER TIGHT. PROVIDE CORED OPENINGS IN PANEL ASSEMBLY TO ACCOMMODATE COMBUSTION AIR PIPE FOR EACH BOILER AND VENTILATION DUCT.
4. PROVIDE FULL SIZE TEE WITH SIDE OUTLET AND CAP TO ACCOMMODATE CLEANOUT AT OUTSIDE WALL PENETRATION OF EXISTING CHIMNEY.
5. EXISTING CONCRETE HOUSEKEEPING PAD TO REMAIN AFTER DEMOLITION WORK SHOWN ON DRAWING MD-100.
6. RETAIN THE SERVICES OF THE LOCAL LOCKWWAR BOILER REPRESENTATIVE, B.J. TERRONI COMPANY, INC. (215-639-3600) TO ASSIST AND MONITOR RIGGING AND INSTALLATION OF THE BOILERS FROM ADJOINING GRADE THROUGH THE EXISTING BILCO DOORWAY OPENING AND SW6TWAY TO THE BOILER ROOM.
7. PROVIDE ROOM SENSOR WITH INSULATION BASE ON WALL 5'-0"AFF. REFER TO PROJECT MANUAL FOR SEQUENCE OF OPERATION FOR THE BOILER ROOM HEATING AND VENTILATION SYSTEM CONTROL.
8. MOUNT WALL CAP FURNISHED WITH EXHAUST FAN HIGH AS POSSIBLE WITHIN INSULATED METAL PANEL. SEAL WEATHER TIGHT.
9. EXTEND OUTSIDE AIR DUCT DOWN TO 12"AFF WITH OPEN END. PROVIDE SUPPORT BRACKETS AT WALL AND FLOOR.
10. PROVIDE CONDENSATE NEUTRALIZATION BASIN EQUAL TO LOCKWWAR KIT 30097. MOUNT ON EXISTING CONCRETE PAD. EXTEND DISCHARGE PIPE FULL SIZE OF UNIT CONNECTION TO FLOOR DRAIN. PROVIDE VACUUM BREAK AT INLET TO BASIN.
11. CONNECT 1" AND 3/8" CONDENSATE OUTLETS WITH DRAIN HOSES AND CLAMPS TO NEUTRALIZATION BASIN, ALL FURNISHED WITH EACH BOILER. LOCATE BASIN ON EXISTING CONCRETE PAD. EXTEND DISCHARGE PIPE FULL SIZE OF UNIT CONNECTION TO FLOOR DRAIN WITH SUPPORTS AT FLOOR EVERY 3 FEET ON CENTER. PROVIDE VACUUM BREAK AT INLET TO BASIN IN ACCORDANCE WITH BOILER MANUFACTURER'S WRITTEN INSTRUCTIONS. TYPICAL FOR SIX BOILERS.
12. PROVIDE HOSE END, CAP AND CHAIN ON OUTLET OF FACTORY MOUNTED BOILER DRAIN VALVE, TYPICAL FOR SIX BOILERS. PROVIDE HOSE RACK AND THIRTY LINEAR FEET OF HEAVY DUTY RUBBER HOSE WITH DRAIN COUPLING TO MATCH SIZE OF VALVE OUTLET. MOUNT HOSE AND RACK AS DIRECTED BY OWNER'S REPRESENTATIVE.
13. AT END OF EACH HEATING WATER HEADER PIPE, PROVIDE AUTOMATIC AIR VENT ON TOP AND 1"BALL VALVE WITH HOSE END, CAP, AND CHAIN ON BOTTOM. EXTEND OUTLET OF AIR VENT TO NEAREST FLOOR DRAIN.
14. PROVIDE 4"HIGH CONCRETE HOUSEKEEPING PAD UNDER EACH BOILER, EXTEND MINIMUM 6" BEYOND ALL SIDES OF UNIT.
15. MOUNT FLUE DAMPER KIT, DRH30001, FURNISHED WITH EACH BOILER, IN ACCORDANCE WITH BOILER MANUFACTURER'S WRITTEN INSTRUCTIONS. CONNECT 8" FLUE TO BOILER USING FACTORY FURNISHED TRANSITION FITTING.
16. MOUNT EXHAUST FAN HIGH AS POSSIBLE WITH VIBRATION ISOLATORS FURNISHED WITH FAN. MOUNT FAN SPEED CONTROL AT UNIT FOR FINAL AIR BALANCING.
17. INSTALL SYSTEM TEMPERATURE SENSOR FURNISHED WITH THE BOILERS. PROVIDE CONTROL INTERFACE TO BOILERS MASTER CONTROLLER IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
18. COORDINATE NATURAL GAS SERVICE TO EACH BOILER WITH THE WORK OF DIVISION 22 - PLUMBING. TYPICAL FOR SIX BOILERS.
19. MAINTAIN 30" MINIMUM CLEARANCE BETWEEN BOILER CASINGS AND AROUND ALL SIDES OF BOILERS IN ACCORDANCE WITH STATE BOILER CODE.
20. CONNECT 8" COMBUSTION AIR INLET PIPE TO BOILER USING THE FACTORY FURNISHED TRANSITION FITTING AND ADAPTOR WITH GASKET. SEAL AIR TIGHT. TYPICAL FOR SIX BOILERS.
21. MOUNT UNIT HEATER TO WALL USING BRACKET FURNISHED WITH UNIT.
22. COORDINATE LOCKABLE DISCONNECT SWITCH AND EMERGENCY STOP POWER SWITCHES FOR ALL BOILERS WITH THE WORK OF DIVISION 26 - ELECTRIC.
23. EXTEND OUTLET OF BOILER SAFETY RELIEF VALVE FULL SIZE OF DISCHARGE CONNECTION DOWN TO 6" AFF. PROVIDE INSULATION ON ALL FACTORY HEATING WATER PIPING, NOZZLES, AND TRIM.

R-1	FISHER GAS REGULATOR MODEL NPS2CS800 ORIFICE 1-3/8", SPRING RANGE 10"-16" W.C. SET POINT 12" W.C.

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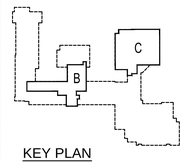

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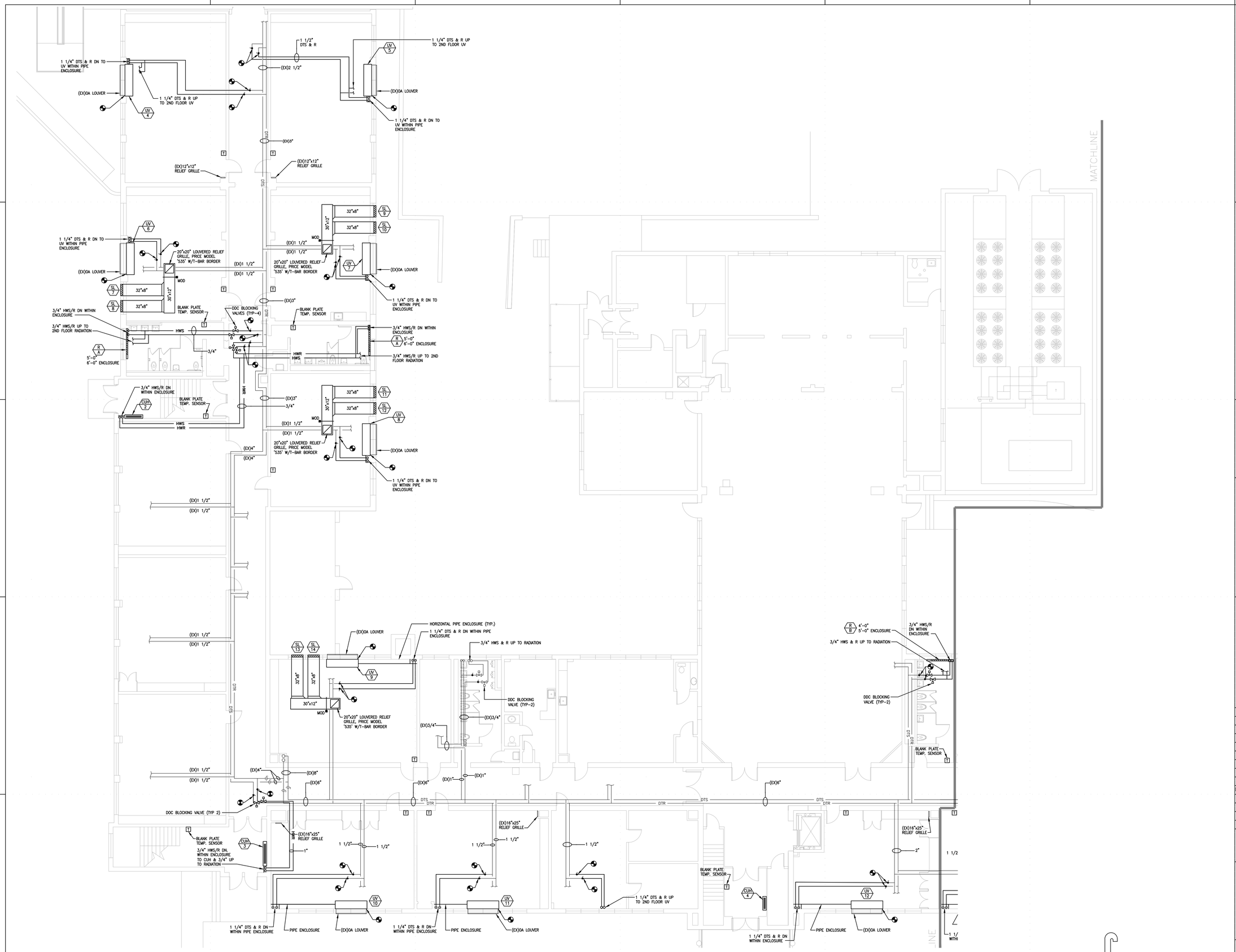
SHEET TITLE
PARTIAL BASEMENT
PLAN MECHANICAL

M-100



A1 PARTIAL FIRST FLOOR PLAN - MECHANICAL
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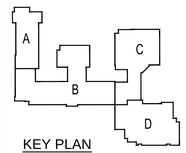

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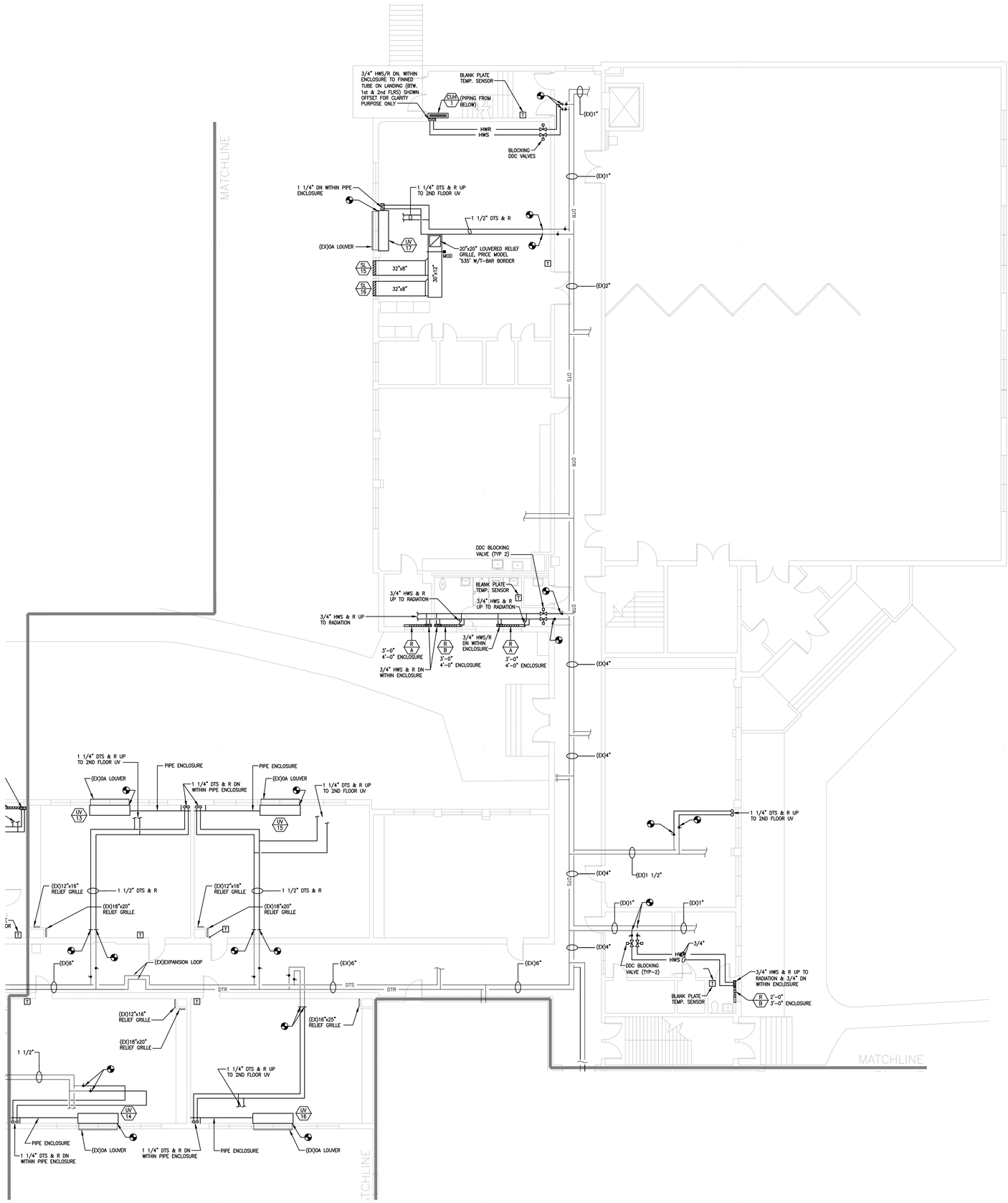
SHEET TITLE
PARTIAL FIRST FLOOR
PLAN MECHANICAL

M-110



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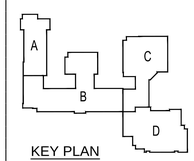

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14.081

SHEET TITLE

PARTIAL FIRST FLOOR
PLAN MECHANICAL

M-111

A1 PARTIAL FIRST FLOOR PLAN - MECHANICAL
SCALE: 1/8" = 1'-0"

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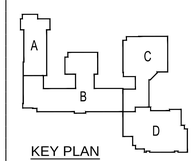

KEY PLAN

PROJECT

2014 RCCSD
CAPITAL IMPROVEMENTS

16 IDELLA AVENUE
WILMINGTON, DELAWARE 19804

RICHARDSON PARK
ELEMENTARY SCHOOL

OWNER

RED CLAY CONSOLIDATED
SCHOOL DISTRICT
1502 SPRUCE AVENUE
WILMINGTON, DE 19805

MARK	DATE	DESCRIPTION
3	02/27/15	ADDENDUM NO. 1
2	02/16/15	BID PAC A
1	02/13/15	DESIGN DEVELOPMENT

PROJECT NO: 1425
FILE NAME
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SHEET TITLE

PARTIAL FIRST FLOOR
PLAN MECHANICAL

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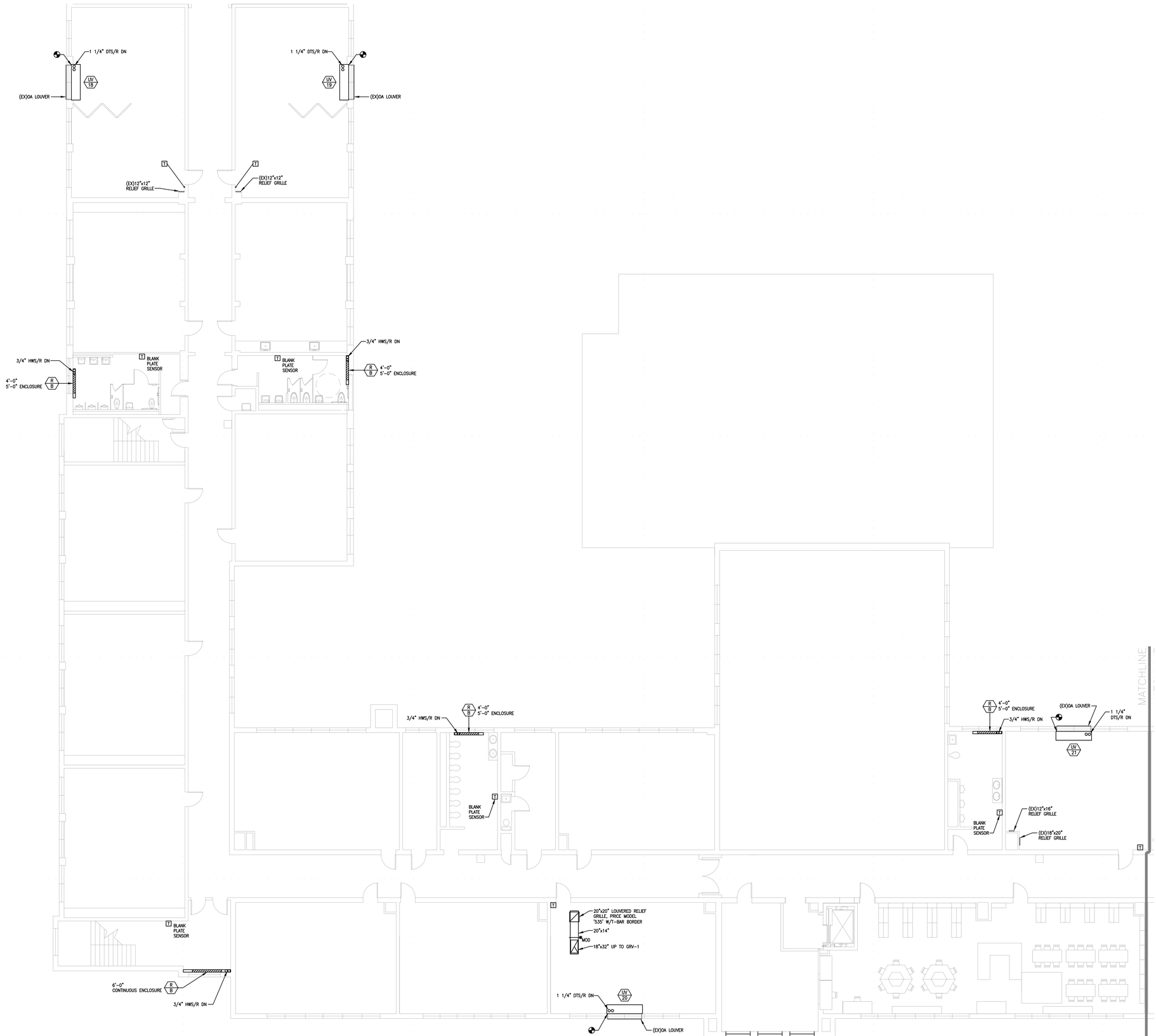
M-112



A1 PARTIAL SECOND FLOOR PLAN - MECHANICAL
SCALE: 1/8" = 1'-0"

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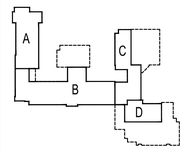

KEY PLAN

PROJECT
2014 RCCSD
CAPITAL IMPROVEMENTS

16 IDELLA AVENUE
WILMINGTON, DELAWARE 19804

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PROJECT NO: 1425
FILE NAME
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SHEET TITLE
PARTIAL SECOND
FLOOR PLAN
MECHANICAL

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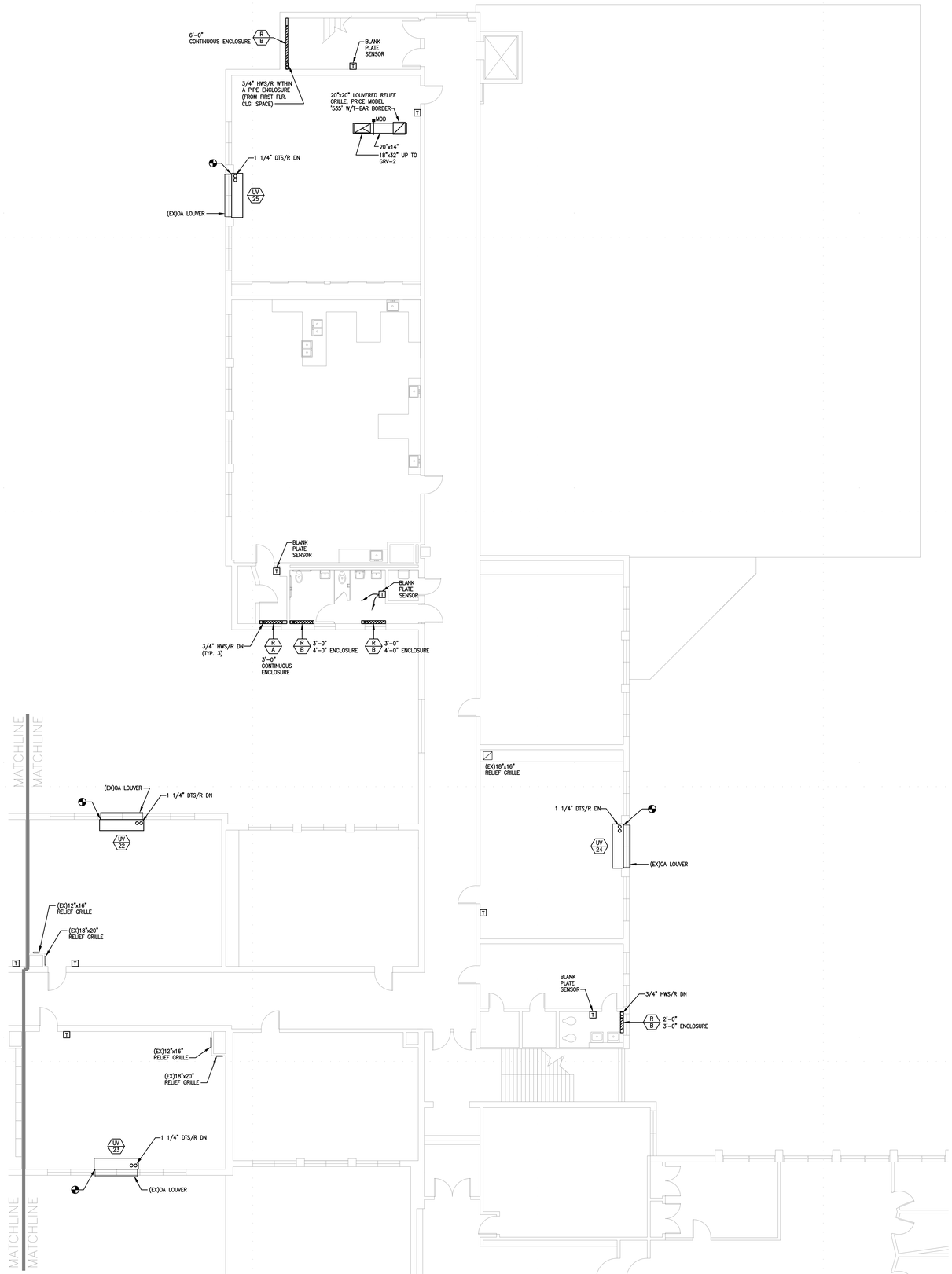
M-120



A1 PARTIAL SECOND FLOOR PLAN - MECHANICAL

SCALE: 1/8" = 1'-0"

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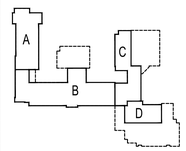

KEY PLAN

PROJECT

2014 RCCSD
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WILMINGTON, DELAWARE 19804

RICHARDSON PARK
ELEMENTARY SCHOOL

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1	02/13/15	DESIGN DEVELOPMENT

PROJECT NO: 1425
FILE NAME
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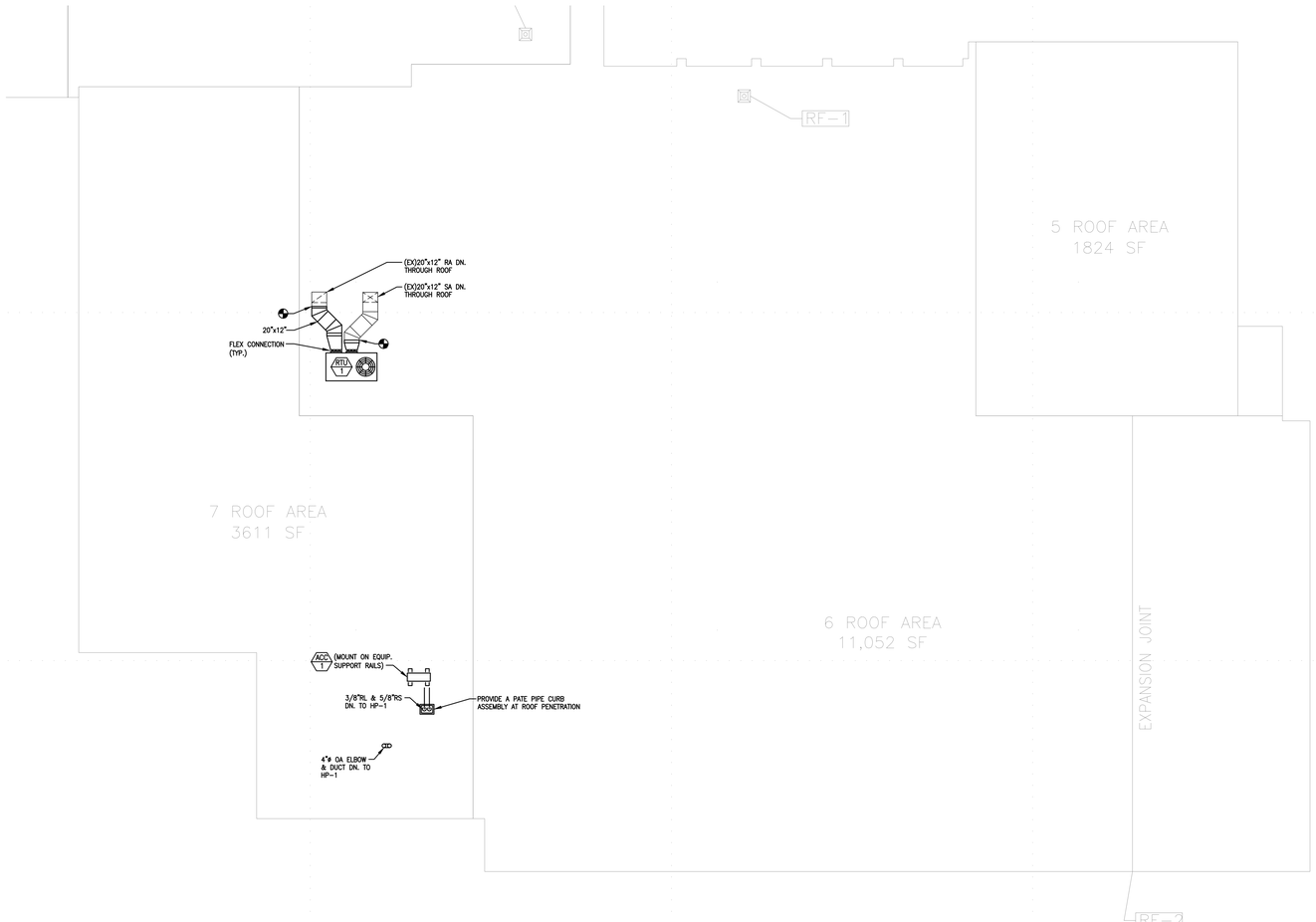
SHEET TITLE

PARTIAL SECOND
FLOOR PLAN
MECHANICAL

M-121



A1 PARTIAL ROOF PLAN - MECHANICAL
SCALE: 1/8" = 1'-0"

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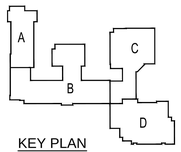

KEY PLAN

PROJECT
2014 RCCSD
CAPITAL IMPROVEMENTS

16 IDELLA AVENUE
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SHEET TITLE
PARTIAL ROOF PLAN
MECHANICAL

M-130

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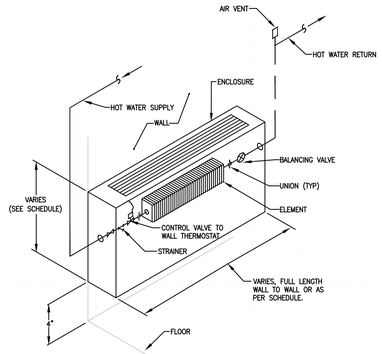
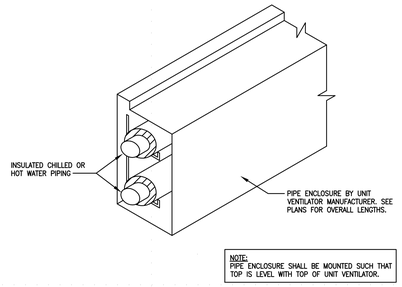


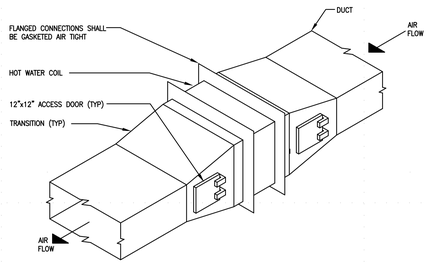
FIN-TUBE RADIATION PIPING DETAIL

NOT TO SCALE



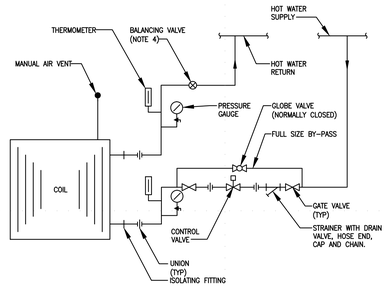
UNIT VENTILATOR PIPE ENCLOSURE DETAIL

NOT TO SCALE



TYPICAL DUCT COIL DETAIL

NOT TO SCALE

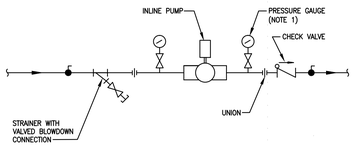


NOTES:

1. ALL BALANCING VALVES ARE TIGHT SHUT-OFF TYPE.
2. UNIONS SHALL BE ARRANGED SO PIPING WILL NOT INTERFERE WITH COIL REMOVAL.
3. INSTALL FOR COUNTER FLOW OF AIR AND WATER WHEN COILS EXCEED ONE ROW DEPTH.
4. UP TO 4" LINE SIZE, FOR 5" AND LARGER, PROVIDE GLOBE VALVE AND FLOW SENSOR.
5. MAINTAIN FULL LINE SIZE FOR SUPPLY AND RETURN PIPING AND ACCESSORIES FOR THE COIL, AS SHOWN ON THE FLOOR PLANS, REGARDLESS OF COIL HEADER AND CONTROL VALVE CONNECTION SIZES.
6. ARRANGE PIPING SO THAT ALL COMPONENTS ARE CLEAR OF UNIT ACCESS PANELS AND SERVICE ACCESS TO AIR FILTERS AND FAN MOTOR. ALL CLEARANCES SHALL BE SUFFICIENT TO ALLOW FOR REMOVAL OF ALL FILTERS, FAN ASSEMBLIES AND COILS WITHOUT REMOVAL OF EXTERNAL PIPING IN THE VICINITY OF THE UNIT.

HOT WATER COIL 2-WAY CONTROL VALVE PIPING DETAIL

NOT TO SCALE

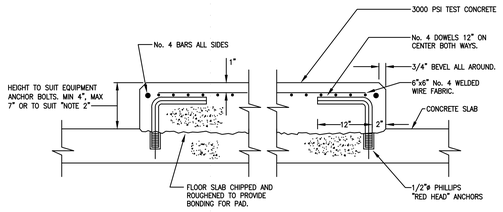


NOTE:

1. PROVIDE ONE PRESSURE GAUGE MANIFOLD TO TWO VALVES. (OPTION)
2. PROVIDE PIPE FITTINGS TO ACCOMMODATE SIZES OF PUMP, PIPING AND VALVE CONNECTIONS.

INLINE PUMP DETAIL

NOT TO SCALE



NOTES:

1. PAD DIMENSIONS, SIZE AND LOCATIONS OF ANCHOR BOLTS MUST SUIT EQUIPMENT ACTUALLY INSTALLED.
2. HEIGHT OF PAD MUST BE SUFFICIENT TO ACCOMMODATE ANY DRAIN PIPING AT THE INSTALLED EQUIPMENT.

CONCRETE PAD FOR LIGHT EQUIPMENT DETAIL

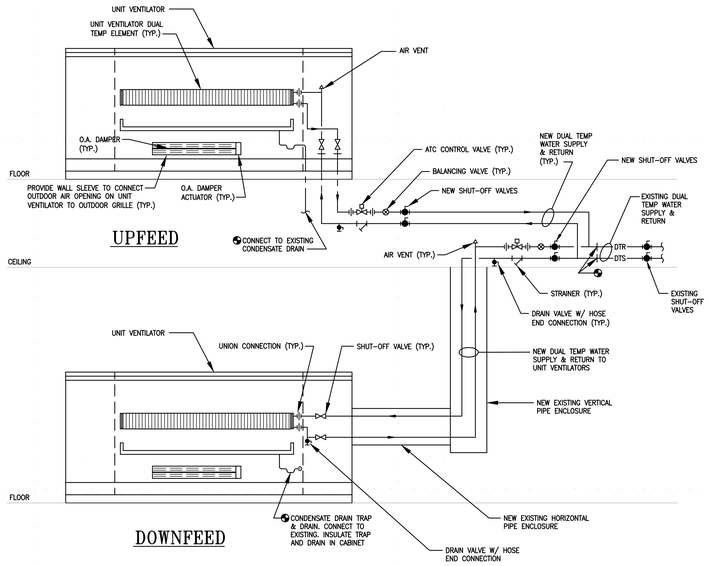
NOT TO SCALE

NOMINAL PIPE OR TUBING SIZE		(3) NOMINAL ROD ø		(4) NOMINAL ROD ø	
IN	MM	IN	MM	IN	MM
1/4	(6)			3/8	M10
3/8	(10)	3/8	M10	3/8	M10
1/2	(15)	3/8	M10	3/8	M10
3/4	(20)	3/8	M10	3/8	M10
1	(25)	3/8	M10	3/8	M10
1 1/4	(32)	3/8	M10	3/8	M10
1 1/2	(40)	3/8	M10	3/8	M10
2	(50)	3/8	M10	3/8	M10
2 1/2	(65)	1/2	M12	1/2	M12
3	(80)	1/2	M12	1/2	M12
3 1/2	(90)	1/2	M12	1/2	M12
4	(100)	5/8	M16	1/2	M12
5	(125)	5/8	M16	1/2	M12
6	(150)	3/4	M20	5/8	M16
8	(200)	3/4	M20	3/4	M20
10	(250)	7/8	M20	3/4	M20
12	(300)	7/8	M20	3/4	M20
14	(350)	1	M24		
16	(400)	1	M24		
18	(450)	1	M24		
20	(500)	1 1/4	M30		
24	(600)	1 1/4	M30		
30	(750)	1 1/4	M30		

NOTES:

1. FOR CALCULATED LOADS, ROD DIAMETERS MAY BE SIZED IN ACCORDANCE WITH MSS SP-58, TABLE 3 PROVIDED TABLE 1 AND SECTION 7.3 OF MSS SP-58 ARE SATISFIED.
2. RODS MAY BE REDUCED ONE SIZE FOR DOUBLE ROD HANGERS. MINIMUM ROD DIAMETER SHALL BE 3/8" (M10).
3. FOR STANDARD WEIGHT STEEL PIPE, WATER AND VAPOR SERVICE.
4. FOR COPPER TUBE, WATER SERVICE.

TABLE OF MINIMUM ROD DIAMETER FOR SINGLE RIGID ROD HANGERS(1)(2)

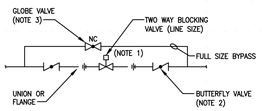


UPFEED

DOWNFEED

NOTES:

1. MAINTAIN FULL LINE SIZE FOR SUPPLY AND RETURN PIPING AND ACCESSORIES FOR THE COIL, AS SHOWN ON THE FLOOR PLANS, REGARDLESS OF COIL HEADER AND CONTROL VALVE CONNECTION SIZES.
2. ALL PIPING AND VALVES WITHIN CABINETS AND ENCLOSURES SHALL BE INSULATED. INSULATION INCLUDES CONDENSATE DRAIN & TRAP.
3. INSTALL VERTICAL AND HORIZONTAL PIPE ENCLOSURES. COLOR & FINISH SHALL BE AS SELECTED BY THE ARCHITECT.

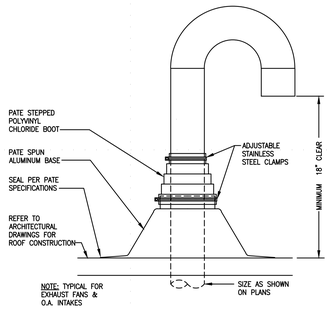


NOTE:

1. HEATING SYSTEM BLOCKING VALVE SHALL BE NORMALLY OPEN; COOLING SYSTEM - NORMALLY CLOSED.
2. PROVIDE BUTTERFLY VALVES FOR PIPING 4" AND ABOVE; BALL VALVES FOR 3" AND SMALLER.
3. BYPASS VALVE IS NOT REQUIRED FOR TERMINAL UNIT BLOCKING VALVE.

BLOCKING VALVE DETAIL

NOT TO SCALE



INTAKE/EXHAUST DUCT ROOF CURB DETAIL

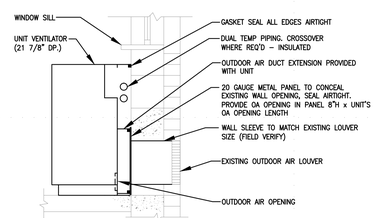
NOT TO SCALE

PIPING SUPPORT SPACING TABLE		
PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (FEET)	MAXIMUM VERTICAL SPACING (FEET)
ABS PIPE	4	10 [b]
ALUMINUM PIPE AND TUBING	10	15
BRASS PIPE	10	10
BRASS TUBING, 1 1/4"ø AND SMALLER	6	10
BRASS TUBING, 1 1/2"ø AND LARGER	10	10
CAST-IRON PIPE[a]	5	15
COPPER OR COPPER-ALLOY PIPE	12	10
COPPER OR COPPER-ALLOY TUBING, 1 1/4"ø AND SMALLER	6	10
COPPER OR COPPER-ALLOY TUBING, 1 1/2"ø AND LARGER	10	10
CPVC PIPE OR TUBING, 1" AND SMALLER	3	10 [b]
CPVC PIPE OR TUBING, 1 1/4" AND LARGER	4	10 [b]
STEEL PIPE	12	15
STEEL TUBING	8	10
LEAD PIPE	CONTINUOUS	4
PB PIPE OR TUBING	2 2/3 (32 INCHES)	4
PEX TUBING	2 2/3 (32 INCHES)	10 [b]
PVC PIPE	4	10 [b]

NOTES:

a. THE MAXIMUM HORIZONTAL SPACING OF CAST-IRON PIPE HANGERS SHALL BE INCREASED TO 10 FEET WHERE 10 FOOT LENGTHS OF PIPE ARE INSTALLED.

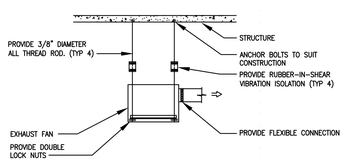
b. MID-STORY GUIDE.



INSTALLATION DETAIL

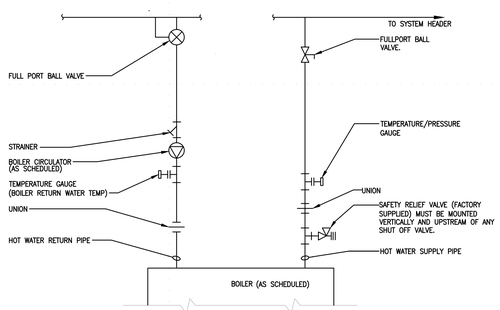
CLASSROOM UV CONNECTION DETAILS

NOT TO SCALE



EXHAUST FAN MOUNTING DETAIL

NOT TO SCALE



BOILER PIPING DETAIL

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PROJECT NO: 1425
FILE NAME M-500_14081.DWG
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SHEET TITLE
DETAILS
MECHANICAL

M-500

DUCTLESS SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE

(HP N) PLAN SYMBOL

EQUIPMENT NUMBER	UNIT TYPE	AREA SERVED	FAN DATA		COOLING @ 95° COND. (R-410A)						HEATING @ 10°			ELECTRICAL DATA					MAKE & MODEL	NOTES
			SA CFM	OA CFM	TOTAL MBH	SENS MBH	EAT (°F)		LAT (°F)		TOTAL MBH	EAT (°F)	LAT (°F)	VOLTS PHASE	MCA	MOCP	FACTORY DISCONNECT	SPP		
							Db	Wb	Db	Wb										
HP-1	CLG. MOUNT CASSETTE	CONFERENCE ROOM	424	40	18	14.4	80	67	55	54	20	68	110	208/1	–	–	NO	YES	LG MODEL "LCN187HV"	1
ACC-1	CONDENSING UNIT	CONFERENCE ROOM	–	–	–	–	95	–	–	–	–	–	–	208/1	18.1	30	NO	YES	LG MODEL "LUU187HV"	2

NOTES:
1. PROVIDE UNIT WITH A WIRED CONTROLLER AND A CONDENSATE PUMP.
2. PROVIDE UNIT WITH LOW AMBIENT CONTROLS.

HOT WATER DUCT COIL SCHEDULE

(HWC N) PLAN SYMBOL

EQUIPMENT NUMBER	SERVICE	TOTAL MBH	AIR				WATER				MAX. F.V.	ROWS	FINS/ INCH	COIL SIZE W" x H"	MAKE & MODEL	NOTES
			CFM	EAT (°F)	LAT (°F)	APD (IN. W.C.)	GPM	EWT (°F)	LWT (°F)	WPD (IN. W.C.)						
HWC-1	OFFICES	13.4	275	55	100	0.08	1.4	140	120	0.7	293	2	10	15"x9"	JOHNSON CONTROLS MODEL "MA010100915"	–
HWC-2	CONFERENCE ROOM	14.6	300	55	100	0.09	1.5	140	120	0.8	320	2	10	15"x9"	JOHNSON CONTROLS MODEL "MA010100915"	–
HWC-3	RECEPTION AREA	7.3	150	55	100	0.1	0.8	140	120	0.2	300	2	12	12"x6"	JOHNSON CONTROLS MODEL "MA010120612"	–
HWC-4	RECEPTION AREA	7.3	150	55	100	0.1	0..8	140	120	0.2	300	2	12	12"x6"	JOHNSON CONTROLS MODEL "MA010120612"	–
HWC-5	OFFICES	9.7	200	55	100	0.07	1.1	140	120	0.4	267	2	10	12"x9"	JOHNSON CONTROLS MODEL "MA010100912"	–
HWC-6	OFFICE/COMP. RM.	26.7	550	55	100	0.12	2.9	140	120	3.7	367	2	10	18"x12"	JOHNSON CONTROLS MODEL "MA010101218"	–

FINNED TUBE RADIATION SCHEDULE

(R N) PLAN SYMBOL

EQUIPMENT NUMBER	TYPE	BTUH PER LF	FIN HEATING ELEMENT				ENCLOSURE		WATER TEMPERATURE		ROWS OF FINNED TUBE	PIPE SIZE (IN)	MAKE & MODEL	NOTES
			THICK (IN)	WIDTH (IN)	HEIGHT (IN)	FINS PER FOOT	HEIGHT (IN)	WIDTH (IN)	EWT (°F)	LWT (°F)				
R-A	SLOPED GRILLE	654	0.016	4 1/4	4 1/4	48	14	5 3/8"	140	120	1	3/4	RITTLING MODEL "FS-5"	1, 2, 3
R-B	SLOPED TOP	887	0.016	4 1/4	4 1/4	48	20	5 3/8	140	120	2	3/4	RITTLING MODEL "FS-5"	1, 2, 3

NOTES:
1. PROVIDE AN END CAP AND END CAP WITH ACCESS DOOR FOR EACH SECTION.
2. ENCLOSURE SHALL CONCEAL HWS AND HWR PIPING.
3. FINAL COLOR SELECTION BY ARCHITECT.

PUMP SCHEDULE

(P N) PLAN SYMBOL

EQUIPMENT NUMBER	DESCRIPTION	GPM	FT HD	IMPELLER SIZE (IN)	EFFICIENCY (%)	PUMP BHP	ECM MOTOR				MAKE & MODEL	NOTES
							HP	RPM	VOLTS/ PHASE	RLA		
P-1	INLINE BOILER PUMP FOR B-1	105	15	MAGNETIC ROTOR	NA	0.035 TO 1.08	–	VARIES	110/240	3.5–6.0	TACO VIRIDIAN MODEL VR-20-1	ALL
P-2	INLINE BOILER PUMP FOR B-2	105	15	MAGNETIC ROTOR	NA	0.035 TO 1.08	–	VARIES	110/240	3.5–6.0	TACO VIRIDIAN MODEL VR-20-1	ALL
P-3	INLINE BOILER PUMP FOR B-3	105	15	MAGNETIC ROTOR	NA	0.035 TO 1.08	–	VARIES	110/240	3.5–6.0	TACO VIRIDIAN MODEL VR-20-1	ALL
P-4	INLINE BOILER PUMP FOR B-4	105	15	MAGNETIC ROTOR	NA	0.035 TO 1.08	–	VARIES	110/240	3.5–6.0	TACO VIRIDIAN MODEL VR-20-1	ALL
P-5	INLINE BOILER PUMP FOR B-5	105	15	MAGNETIC ROTOR	NA	0.035 TO 1.08	–	VARIES	110/240	3.5–6.0	TACO VIRIDIAN MODEL VR-20-1	ALL
P-6	INLINE BOILER PUMP FOR B-6	105	15	MAGNETIC ROTOR	NA	0.035 TO 1.08	–	VARIES	110/240	3.5–6.0	TACO VIRIDIAN MODEL VR-20-1	ALL

NOTES:
1. EACH PUMP SHALL BE FURNISHED WITH A FACTOY INSTALLED VARIABLE SPEED DRIVE.
2. PROVIDE PROGRAMMING OF EACH PUMP DRIVE AS PART OF THE FACTORY BOILER STARTUP.

ELECTRIC HEATER SCHEDULE

(EUH N) PLAN SYMBOL

EQUIPMENT NUMBER	DESCRIPTION	ELECTRICAL				CFM	HEATER KW	MOTOR HP	VOLT/PHASE	NOTES
		MCA	FACTORY STARTER	FACTORY DISCONNECT	SPP					
EUH-1	HORIZONTAL UNIT HEATER FAN	15.9	NO	YES	YES	400	3.3	1/125	208/1	ALL

NOTES:
1. PROVIDE WALL MOUNTING BRACKET AND DUST SHIELD.
2. PROVIDE INTEGRAL POWER DISCONNECT SWITCH.
3. PROVIDE FACTORY MOUNTED AND WIRED CONTROL VOLTAGE TRANSFORMER AND 24VOLT CONTROL CIRCUIT FOR BAS INTERFACE.

FAN SCHEDULE

(EF N) PLAN SYMBOL

EQUIPMENT NUMBER	FUNCTION	DESCRIPTION	ELECTRICAL DATA – FAN MOTOR						CFM	RPM	ESP (IN. WC.)	INPUT WATTS	MAKE & MODEL	NOTES	DRIVE	WHEEL	
			VOLT/PHASE	MCA	EFFICIENCY	FACTORY STARTER	FACTORY DISCONNECT	SPP								TYPE	DIA.
EF-1	VENT	CEILING FAN	120/1	3.9	–	NO	YES	YES	500	1193	0.38	195	LOREN COOK GC-720	ALL	DIRECT	FC	6"

NOTES:
1. PROVIDE FACTORY MOUNTED AND WIRED FAN SPEED CONTROL.
2. PROVIDE MILL FINISH ALUMINUM WALL CAP, MODEL WCA-8.
3. PROVIDE SET OF (4) MODEL RC-75 ISOLATORS.
4. INLET GRILLE SHALL BE POWDER PAINTED WHITE STEEL.

HOT WATER CABINET UNIT HEATER SCHEDULE

(CUH N) PLAN SYMBOL

EQUIPMENT NUMBER	LOCATION	UNIT TYPE	MOUNTING ARRANGEMENT		CFM	MIN. MBH	EAT (°F)	EWT (°F)	LWT (°F)	GPM	WPD (FT. HD)	MOTOR	ELECTRICAL DATA					MAKE & MODEL	NOTES
			SURFACE	RECESSED								HP	AMP	FACTORY STARTER	FACTORY DISCONNECT	SPP	VOLT/ PHASE		
CUH-1	STAIR S1	FLOOR MOUNT	YES	–	230	9	60	140	120	2	0.3	1/30	0.7	NO	NO	YES	120/1	RITTLING MODEL "RF-200" SIZE 03	1,2
CUH-2	STAIR S7	FLOOR MOUNT	YES	–	335	11.5	60	140	120	2	0.4	1/25	0.85	NO	NO	YES	120/1	RITTLING MODEL "RF-200" SIZE 04	1,2
CUH-3	STAIR S6	FLOOR MOUNT	YES	–	615	18	60	140	120	3	0.2	1/30, 1/15	1.8	NO	NO	YES	120/1	RITTLING MODEL "RF-200" SIZE 08	1,2
CUH-4	STAIR S5	FLOOR MOUNT	YES	–	190	6	60	140	120	1	0.1	1/40	0.55	NO	NO	YES	120/1	RITTLING MODEL "RF-200" SIZE 02	1,2

NOTES:
1. CUH SHALL BE PROVIDED WITH A SLOPED TOP.
2. FINAL COLOR SELECTION SHALL BE BY ARCHITECT.

UNIT HEATER SCHEDULE

(UH N) PLAN SYMBOL

EQUIPMENT NUMBER	TYPE		ELECTRICAL DATA				FAN				HOT WATER						MAKE & MODEL	NOTES
	HORIZ	VERT	AMPS	FACTORY STARTER	FACTORY DISCONNECT	SPP	CFM	HP	VOLT/ PHASE	RPM	MIN. MBH	GPM	EAT (°F)	EWT (°F)	LWT (°F)	WPD (FT. HD)		
UH-1	YES	–	0.7	NO	NO	YES	450	1/30	120/1	1550	8	1.7	60	140	120	0.8	RITTLING MODEL "RH-24"	–

NOTES:
1. –

BOILER SCHEDULE

(B N) PLAN SYMBOL

EQUIPMENT NUMBER	DESCRIPTION	ELECTRICAL		ELECTRICAL DATA				GROSS OUTPUT MBH	OPER PRESSURE (PSIG)	MEDIUM	BOILER FLOW (GPM)	BOILER DELTA-P (FT. HEAD)	FUEL	GAS FIRING RATE CFH	MIN. GAS PRESSURE (IN WC)	INLET/FLUE (CONN. SIZE)	SAFETY VALVE SETTING (PSIG)	MAKE & MODEL	WEIGHT (LBS) W/ WATER	NOTES
		VOLT/PH	BOILER HP	AMPS	FACTORY STARTER	FACTORY DISCONNECT	SPP													
B-1	HIGH EFFICIENCY CONDENSING BOILER	120/1	60	13	NO	NO	NO	1920	30	WATER	105	1.5	NATURAL GAS	2000	4"	8"/8"	50	LOCHINVAR MODEL "FBN-2001"	2570	ALL
B-2	HIGH EFFICIENCY CONDENSING BOILER	120/1	60	13	NO	NO	NO	1920	30	WATER	105	1.5	NATURAL GAS	2000	4"	8"/8"	50	LOCHINVAR MODEL "FBN-2001"	2570	ALL
B-3	HIGH EFFICIENCY CONDENSING BOILER	120/1	60	13	NO	NO	NO	1920	30	WATER	105	1.5	NATURAL GAS	2000	4"	8"/8"	50	LOCHINVAR MODEL "FBN-2001"	2570	ALL
B-4	HIGH EFFICIENCY CONDENSING BOILER	120/1	60	13	NO	NO	NO	1920	30	WATER	105	1.5	NATURAL GAS	2000	4"	8"/8"	50	LOCHINVAR MODEL "FBN-2001"	2570	ALL
B-5	HIGH EFFICIENCY CONDENSING BOILER	120/1	60	13	NO	NO	NO	1920	30	WATER	105	1.5	NATURAL GAS	2000	4"	8"/8"	50	LOCHINVAR MODEL "FBN-2001"	2570	ALL
B-6	HIGH EFFICIENCY CONDENSING BOILER	120/1	60	13	NO	NO	NO	1920	30	WATER	105	1.5	NATURAL GAS	2000	4"	8"/8"	50	LOCHINVAR MODEL "FBN-2001"	2570	ALL

NOTE:
1. BOILERS SHALL BE FACTORY PROGRAMMED FOR CASCADE OPERATION IN CONJUNCTION WITH THE EXISTING BUILDING DDC BAS BY JOHNSON METASYS.
2. COORDINATE NATURAL GAS PRESSURE WITH THE WORK OF DIVISION 22 – PLUMBING FOR RANGE OF 4" TO 10" WC FOR EACH BOILER.
3. PROVIDE FACTORY TEMPERATURE SENSOR FOR FIELD MOUNTING IN THE SYSTEM HEATING WATER SUPPLY PIPING. PROVIDE ALL REQUIRED CONTROL WIRING TO BOILER SYSTEM CONTROLS.
4. PROVIDE FACTORY FLUE DAMPER KIT, MODEL DPH3D001, FOR FIELD MOUNTING AT EACH BOILER.
5. PROVIDE FACTORY ADAPTER AND GASKET FOR FIELD CONNECTION OF COMBUSTION AIR PIPE AT EACH BOILER.
6. PROVIDE TRANSITION FITTING FOR FIELD CONNECTION OF FLUE GAS VENT OUTLET SYSTEM AT EACH BOILER.
7. PROVIDE FACTORY NEUTRALIZATION KIT, MODEL KIT30097, INCLUDING ALL HOSES, CLAMPS, AND BASIN FOR FIELD MOUNTING AT EACH BOILER. PROVIDE SPARE CHARGE OF BASIN MATERIALS TO OWNER'S REPRESENTATIVE FOR EACH BOILER.

UNIT VENTILATOR SCHEDULE

(UV N) PLAN SYMBOL

EQUIPMENT NUMBER	AREA SERVED	OA CFM	SUPPLY AIR			DUAL TEMPERATURE COIL CAPACITY																ELECTRICAL DATA				MAKE & MODEL	NOTES
						COOLING								CIRCULATING WATER		HEATING											
			CFM	SPEED	HP	TOTAL MBH	SENS MBH	EAT (°F)		LAT (°F)		EWT (°F)	LWT (°F)	GPM	WPD (FT HD)	TOTAL MBH (MIN)	EAT (°F)	MIN LAT (°F)	EWT (°F)	LWT (°F)	VOLT/ PHASE	FACTORY STARTER	FACTORY DISCONNECT	SPP		
								Db	Wb	Db	Wb																
UV-1	CLASSROOM	250	750	HIGH	1/4	32	20	80	67	56	55	42	52	6.5	7.7	48	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S07"	1,2,4
UV-2	CLASSROOM	250	750	HIGH	1/4	32	20	80	67	56	55	42	52	6.5	7.7	48	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S07"	1,2,4
UV-3	CLASSROOM	250	750	HIGH	1/4	32	20	80	67	56	55	42	52	6.5	7.7	48	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S07"	1,2,4
UV-4	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-5	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-6	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-7	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-8	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-9	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-10	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-11	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-12	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-13	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-14	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-15	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-16	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-17	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-18	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-19	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-20	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-21	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-22	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-23	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-24	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4
UV-25	CLASSROOM	450	1250	HIGH	1/4	49	30	80	67	56	55	42	52	10.0	8.67	59	50	100	140	120	208/1	NO	NO	YES	DAIKIN MODEL "UAVS6S13"	1,3,4

NOTES:
1. UNIT VENTILATOR SHALL BE PROVIDED WITH FREEZESTAT, TERMINAL STRIP, DEMAND CONTROL VENTILATION, FACE & BYPASS OPERATION AND END PANELS.
2. UNIT VENTILATOR SHALL BE 21 7/8" DP. AND PROVIDED WITH FULL ADAPTER BACK AND TOP DUCT INTAKE.
3. UNIT VENTILATOR SHALL BE 21 7/8" DP. AND PROVIDED WITH PARTIAL ADAPTER BACK.
4. COORDINATE LEFT/RIGHT HAND PIPING CONNECTIONS WITH DRAWING.
5. MANUFACTURER REPRESENTATIVE IS RESPONSIBLE TO FIELD COORDINATE PIPING LOCATION FOR EACH UNIT VENTILATOR.

ROOFTOP UNIT SCHEDULE

(RTU N) PLAN SYMBOL

EQUIPMENT NUMBER	SERVICE	ELECTRICAL DATA					NOM. SA CFM	OA CFM	SUPPLY FAN				COOLING						EER RATING	MAKE & MODEL	WEIGHT (LBS)	NOTES
		MCA	MOCP	FACTORY STARTER	FACTORY DISCONNECT	SPP			ESP (IN. W.C.)	VOLT/ PHASE	HP	RPM	TOTAL MBH	SENS MBH	EAT (°F)		LAT (°F)		MEDIUM			
															Db	Wb	Db	Wb				
RTU-1	ILC AREA	23.7	30	NO	NO	YES	1600	320	0.6	230/3	1.5	962	51	36	79	66	55	54	R-410A	12.0	YORK MODEL "ZE048"	658	1

NOTES:
1. RTU SHALL BE PROVIDED WITH A ROOF CURB, CONTROLLER WITH DISCHARGE AIR, RETURN AIR & OUTSIDE AIR SENSORS, DIRTY FILTER SWITCH AND ECONOMIZER W/HOOD.

LOUVER SCHEDULE

(SL N) PLAN SYMBOL

EQUIPMENT NUMBER	TYPE	CFM	APD (IN WC)	SIZE	FINISH	MAKE & MODEL	NOTES
SL-1	RELIEF	375	0.2	32"x8"x2"DP.	REFER TO SPEC'S	GREENHECK MODEL "ESD-202"	1
SL-2	RELIEF	375	0.2	32"x8"x6"DP.	REFER TO SPEC'S	GREENHECK MODEL "ESD-202"	1
SL-3	RELIEF	375	0.2	32"x8"x6"DP.	REFER TO SPEC'S	GREENHECK MODEL "ESD-202"	1
SL-4	RELIEF	375	0.2	32"x8"x6"DP.	REFER TO SPEC'S	GREENHECK MODEL "ESD-202"	1
SL-5	RELIEF	375	0.2	32"x8"x6"DP.	REFER TO SPEC'S	GREENHECK MODEL "ESD-202"	1
SL-6	RELIEF	375	0.2	32"x8"x6"DP.	REFER TO SPEC'S	GREENHECK MODEL "ESD-202"	1
SL-7	RELIEF	625	0.3	32"x8"x6"DP.	REFER TO SPEC'S	GREENHECK MODEL "ESD-202"	1
SL-8	RELIEF	625	0.3	32"x8"x6"DP.	REFER TO SPEC'S	GREENHECK MODEL "ESD-202"	1
SL-9	RELIEF	625	0.3	32"x8"x6"DP.	REFER TO SPEC'S	GREENHECK MODEL "ESD-202"	1
SL-10	RELIEF	625	0.3	32"x8"x6"DP.	REFER TO SPEC'S	GREENHECK MODEL "ESD-202"	1
SL-11	RELIEF	625	0.3	32"x8"x6"DP.	REFER TO SPEC'S	GREENHECK MODEL "ESD-202"	1
SL-12	RELIEF	625	0.3	32"x8"x6"DP.	REFER TO SPEC'S	GREENHECK MODEL "ESD-202"	1
SL-13	RELIEF	625	0.3	32"x8"x6"DP.	REFER TO SPEC'S	GREENHECK MODEL "ESD-202"	1
SL-14	RELIEF	625	0.3	32"x8"x6"DP.	REFER TO SPEC'S	GREENHECK MODEL "ESD-202"	1
SL-15	RELIEF	625	0.3	32"x8"x6"DP.	REFER TO SPEC'S	GREENHECK MODEL "ESD-202"	1
SL-16	RELIEF	625	0.3	32"x8"x6"DP.	REFER TO SPEC'S	GREENHECK MODEL "ESD-202"	1

NOTES:
1. COLOR AS SELECTED BY ARCHITECT.

GRAVITY RELIEF ROOF VENT SCHEDULE

(GRV N) PLAN SYMBOL

EQUIPMENT NUMBER	UNIT SERVED	CAPACITY CFM	FREE AREA	THROAT SIZE	ESP (IN WC)	MAKE & MODEL	NOTES
GRV-1	UV-20	1500	5.6 SQ.FT.	32x18	0.05	COOK MODEL "18x32x3TRE"	1
GRV-2	UV-25	1500	5.6 SQ.FT.	32x18	0.05	COOK MODEL "18x32x3TRE"	1

NOTES:
1. PROVIDE WITH A ROOF CURB.

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PROJECT
2014 RCCSD
CAPITAL IMPROVEMENTS

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MARK	DATE	DESCRIPTION
3	02/27/15	ADDENDUM NO. 1
2	02/16/15	BID PAC A
1	02/13/15	DESIGN DEVELOPMENT

PROJECT NO: 1425
FILE NAME M-500_14081.DWG
DRAWN BY: DEG
CHECKED BY: SAJ

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M-600